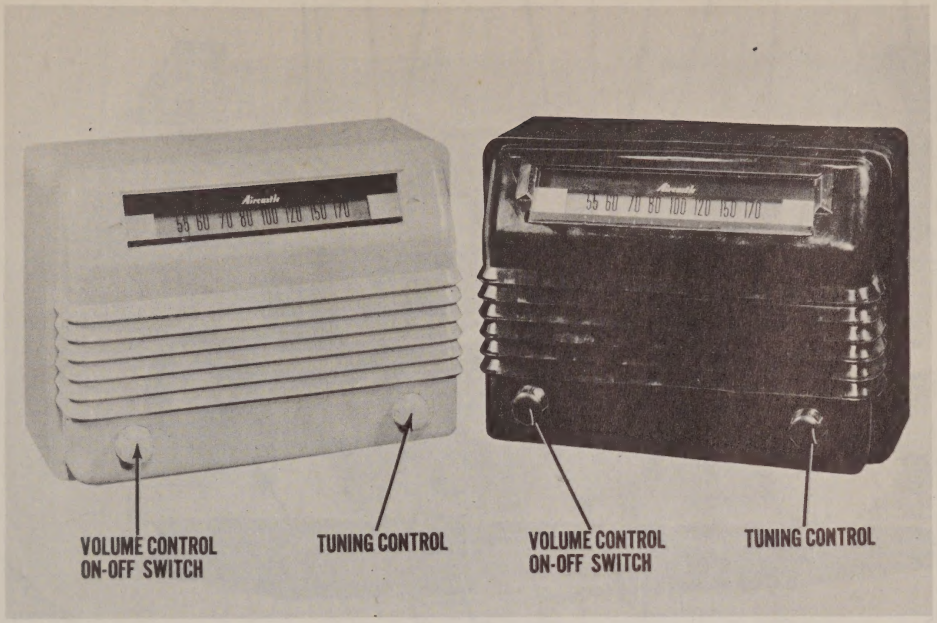

AIRCASTLE
MODEL 651

AIRCASTLE
MODEL 651

AIRCASTLE MODEL 651

TRADE NAME	Aircastle, Model 651
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 14Q7 Converter, 14A7/12B7 IF Amp., 14B6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .235 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	Quiet point at high freq. end of dial.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	High side to ant. lead. Low side to chassis.	1720KC	High freq.end (Fully clockwise)	"	A5	" " " "
100 MMF.	"	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	14Q7	14Q7	8AL	
2	IF Amp.	14A7/12B7	14A7/12B7	8V	
3	Det.-AVC-AF	14B6	14B6	8W	
4	Power Output	50A5	50A5	6AA	
5	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	A-25.019	TA-440	PRSA150-40-40	BRD4415	2N511	DSB-2x40-150	Filter - Red
B	40	150							" - "
7	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Output Plate Bypass
9	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Audio Coupling
10	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	" "
11	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	AVC Filter
12	.25	200		TC-2	484-.25	DT4P25	TP430	S-4-25	Line Isolation
13	.002	600		TC-22	684-002	DT6D2	TP405	S-6-002	Ant. Coupling
14	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Audio Plate Bypass
15	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	IF Bypass Vol. Cont.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	500KΩ	1	A-9.066	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

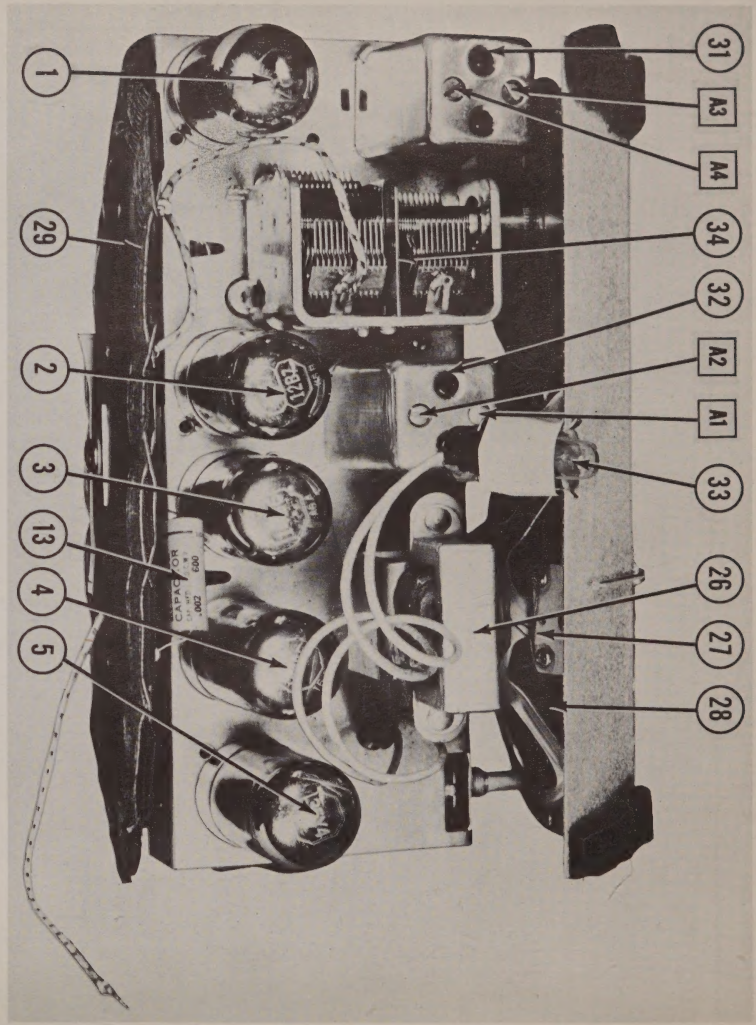
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
17	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
18	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AVC Network
19	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
20	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid ‡
21	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
22	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
23	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
24	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolation
25	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter

‡ Some models may use 15 Meg. ½ W. resistor for this application.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26	17000Ω	3.3Ω	155Ω	.5Ω	Part of B-11.037	A-3876	T22845		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
27	PM	3.3Ω	B-11.037	Mod. P5-X		
	CONE DIA.	VC DIA.				
28	4-5/8"	9/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

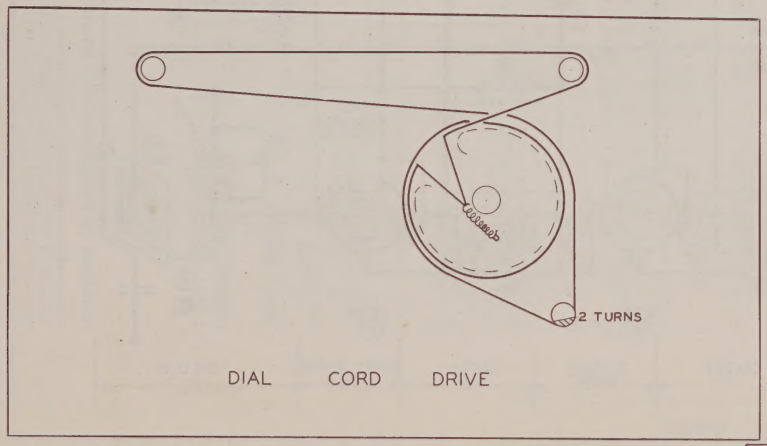
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
29	Loop Ant.	0Ω	1.3Ω	B5.006		
30	Osc. Coil	.8Ω	6.2Ω	B2.192	14-1040*	*Add 50 MMFD cap. from grid to high side tuning cap.
31	Input IF	21.5Ω	21Ω	C2.191-1	16-6666	
32	Output IF	14.2Ω	14.5Ω	C2.191-2	16-6667	

DIAL LIGHT

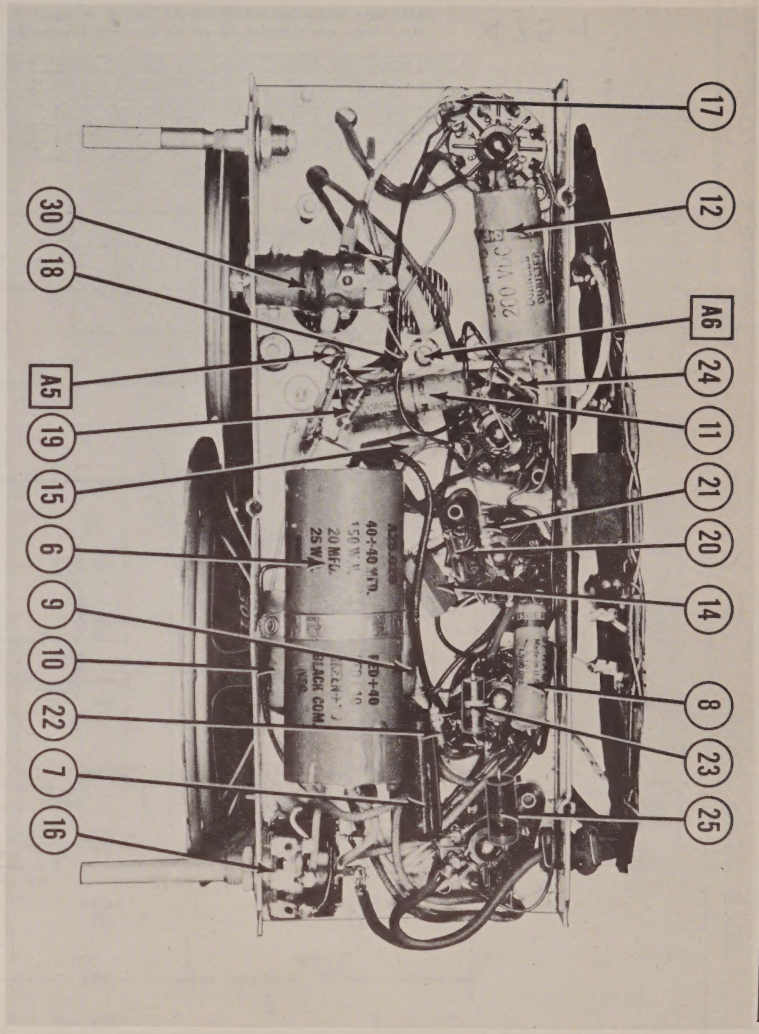
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
33	Bayonet	6-8	0.15	Brown			Type 47

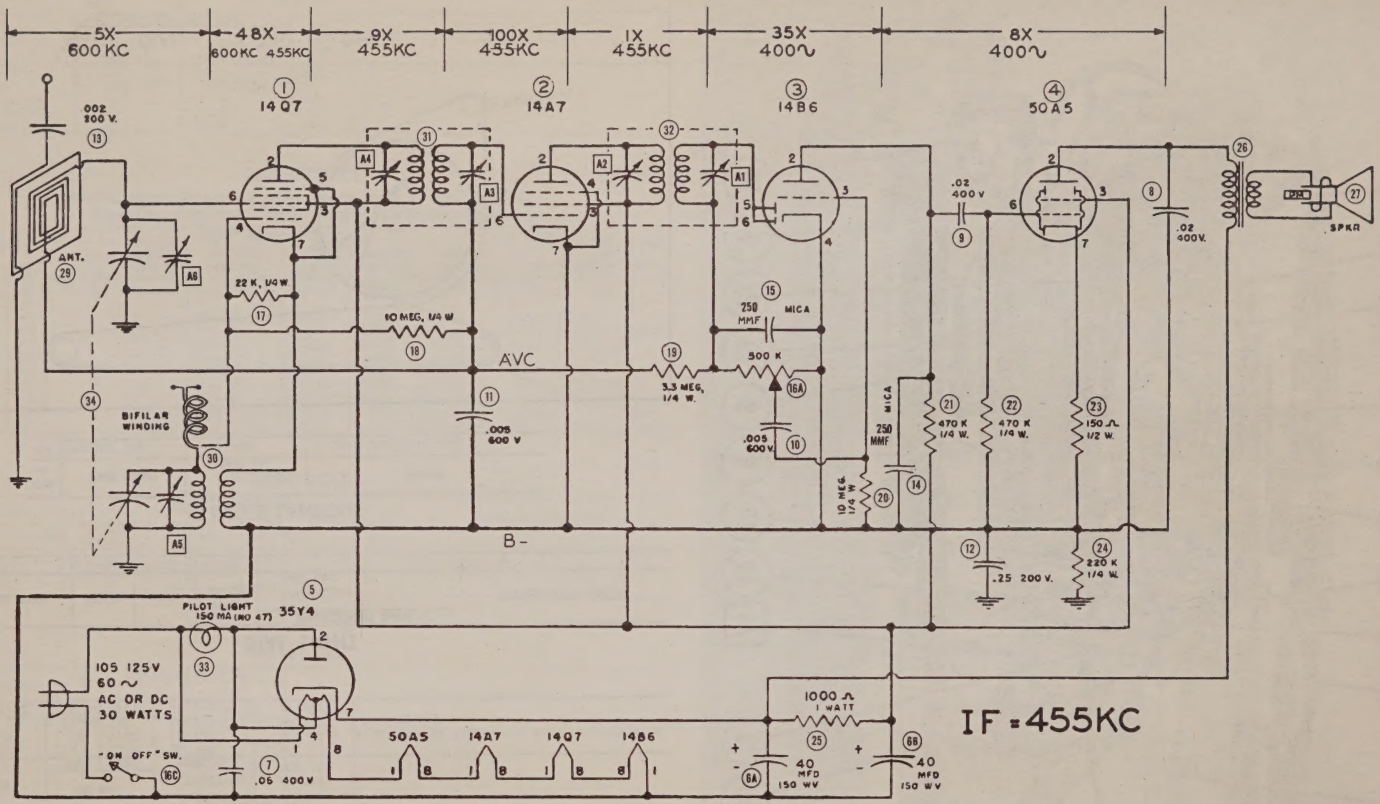
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
34	Tuning Cap.	C6.032	2 Gang Variable Cap.



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	25.5V AC	90 V. DC	90 V. DC	-4.4 V DC	0 V.	-45 V. DC	0 V.	13 V. AC
2	14A7	37.5V AC	90 V. DC	90 V. DC	0 V.	0 V.	-45 V. DC	0 V.	25.5 V. AC
3	14B6	0 V.	5.3 V. DC	-.5 V. DC	0 V.	-.65 V. DC	-.65 V DC	0 V.	13 V. AC
4	50A5	87 V. AC	105 V. DC	90 V. DC	0 V.	0 V.	0 V.	5.9 V. DC	37.5 V. AC
5	35Y4	117 V. AC	113 V. AC	0 V.	113 V. AC	0 V.	0 V	110 V. DC	87 V. AC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	24 Ω	45 KΩ	45 KΩ	21 KΩ	.5 Ω	2.5 MEG.	.5 Ω	12 Ω
2	14A7	35 Ω	45 KΩ	45 KΩ	0 Ω	230 KΩ	2.5 MEG.	0 Ω	24 Ω
3	14B6	0 Ω	515 KΩ	10 MEG.	0 Ω	380 KΩ	380 KΩ	0 Ω	12 Ω
4	50A5	82 Ω	45 KΩ	45 KΩ	0 Ω	0 Ω	440 KΩ	140 Ω	35 Ω
5	35Y4	113 Ω	110 Ω	INF.	110 Ω	INF.	INF.	45 KΩ	82 Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

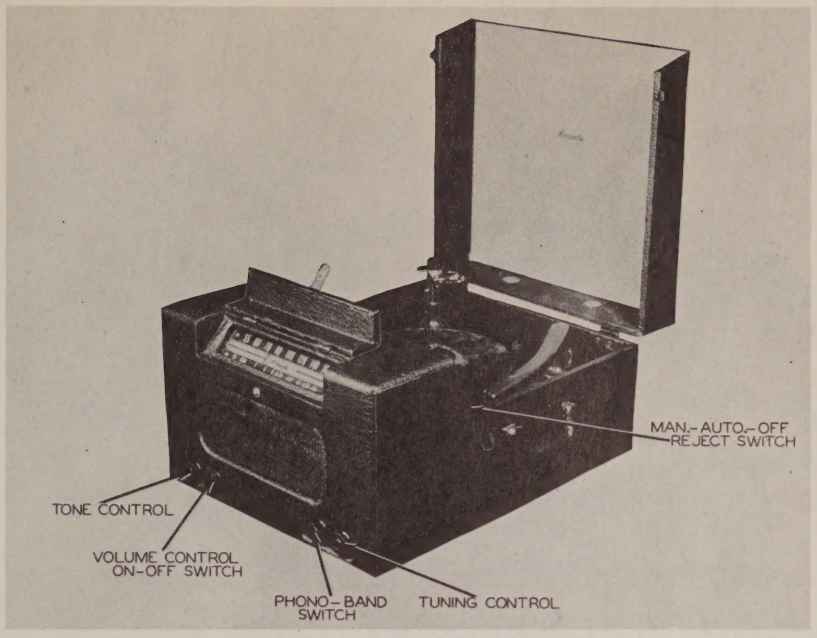
475-1

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AIRCASTLE
MODELS 6611, 6612, 6613, 6630, 6631, 6632, 6634, 6635.

AIRCASTLE
MODELS 6611, 6612, 6613, 6630, 6631, 6632, 6634, 6635.



AIRCASTLE
MODELS 6611, 6612, 6613, 6630, 6631, 6632, 6634, 6635.

AIRCASTLE MODEL 6634

TRADE NAME	Aircastle, Models 6611, 6612, 6613, 1630, 1631, 6632, 6634, 6635
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago, Ill.
TYPE SET	AC Operated Combination Radio -Phono Superheterodyne with Loop Antenna
TUBES (SIX)	Types, 14Q7 Osc.-Converter, 14A7 IF Amp., 14B6 Det.-AVC-AF, (2) 35A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .440 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1660KC — **SHORT WAVE** 5.5-18.6MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum volume and output of signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to front stator of variable. Low side to B-.	455KC	BC	Variable fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
100MMFD.	High side to ext. ant. lead. Low side to B-.	1660KC	"	"	"	A5	Adjust for maximum output.
100MMFD.	"	1500KC	"	Tune for maximum output.	"	A6	" " " "
100MMFD.	"	600KC	"	"	"	A7	Rock variable and adjust for maximum output. Repeat last three steps until no further improvement can be made.
100MMFD. in series with 400Ω	"	18.6MC	SW	Variable fully open.	"	A8	Adjust for maximum output
"	"	18.0MC	"	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODELS
6611, 6612, 6613, 6630,
6631, 6632, 6634, 6635.

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Osc.-Converter	14Q7	14Q7	8AL	
2	IF Amp.	14A7	14A7	8V	
3	Det.-AVC-AF	14B6	14B6	8W	
4	Power Output	35A5	35A5	6AA	
5	Power Output	35A5	35A5	6AA	
6	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	A25.020	TA-440	PRSA150-40	BRD4415	2N511	DSB-305	Filter - Red
B	40	150			40				" "
C	20	25		TA-25	PRS25-25	BR202A	TC26		Cath. Bypass-Green
8	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
9	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
10	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	Output Plate Bypass
11	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	" " "
12	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Audio Coupling
13	.002	600		TC-22	684-002	DT6D2	TP405	S-6-002	Tone Compensation
14	.25	200		TC-2	484-.25	DT4P2	TP430	S-4-25	Audio Plate Decoup.
15	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
16	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
17	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Phono Isolation
18	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Phono Isolation
19	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
20	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Conv. Screen Bypass
21	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	Ant. Isolation
22	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	Ant. Coupling
23	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	IF Bypass Diode
24	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	AVC Coupling
25	4300	500							Fixed Padder
26	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Osc. Grid Capacitor

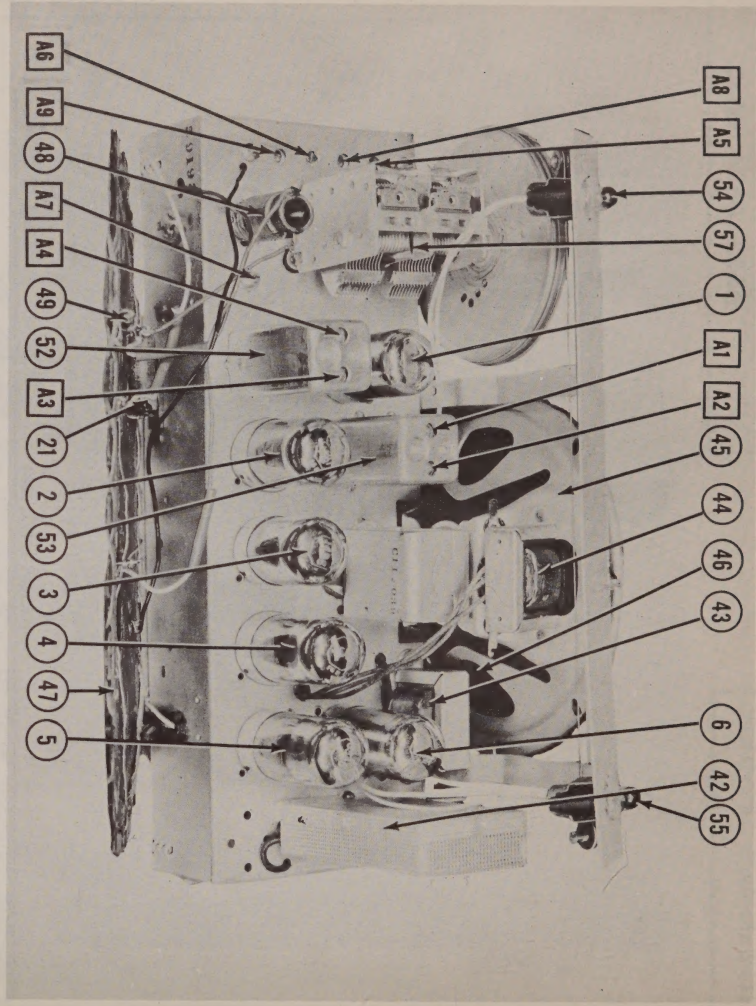
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
27A	500KΩ	1	RA9-066	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 27A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
28A	100KΩ	1	RA9.068	MR39	D13-128	M-51-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 28A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
29	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
30	180Ω	½		BW-½-180	Br.-Gray-Br. RF Decoupling
31	3.3 Meg.	½		BTS-3.3Meg.	Or.-Or.-Grn. AVC Network
32	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Load
33	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode RF Filter
34	2000Ω	½		BTS-2200	Red-Blk.-Red AF Cathode-See Note 1
35	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Grid
36	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AF Plate Load
37	47KΩ	½		BTS-47K	Yl.-Vi.-Or. AF Plate Decoupling
38	220KΩ	½		BTS-220K	Red-Red-Yl. Tone Compensation
39	100Ω	1		BW-½-100	Br.-Blk.-Br. Output Cathode
40	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
41	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolation
42A	83Ω	25	RA14.026		Line Dropping
B	482Ω				"
C	94Ω				Pilot Light Shunt
D	94Ω				" " "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CHOKE (AUDIO COUPLING)

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.		
43Ω	Matched to P-P Grids	2500Ω tapped @ 1100Ω	TA15.018	A-53-C*	T20A16†		*Do not use primary, connect secondary only. †Connect primary to coupling condenser and ground. Ground center-tap of secondary.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
44	2000Ω CT	3.3Ω	280Ω CT	.35Ω	Part of C-11.039	A-3858	T22S47		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.		
45	FIELD PM	VC IMP. 3.3Ω	C-11.039	ST-108 Mod. P6-X		
46	CONE DIA. 8"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
47	Loop Ant.	0Ω	1.5Ω			
48	SW Ant. Coil	0Ω	0Ω		14-1044	
49	Peaking Coil		3Ω			
50	BC Osc. Coil	.5Ω	5Ω		14-1040	
51	SW Osc. Coil	0Ω	0Ω		14-1046	
52	Input IF	21.5Ω	21Ω	ZC-2.191-2	16-6666	
53	Output IF	14.2Ω	14.5Ω	ZC-2.191-2	16-6667	

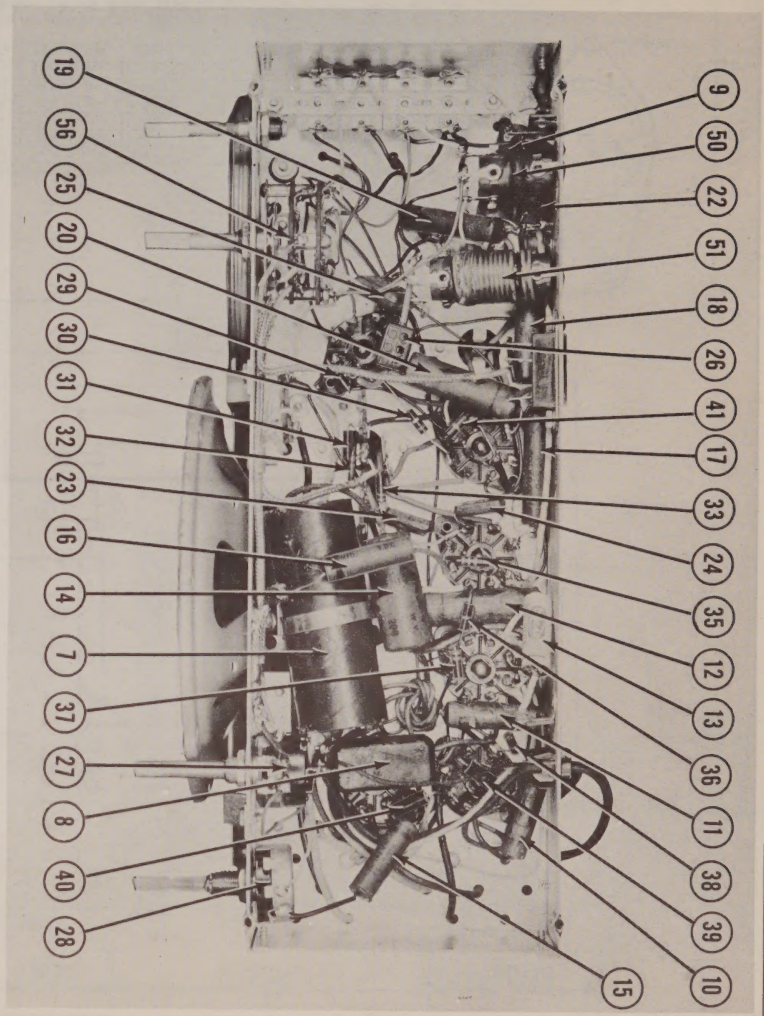
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIRCASTLE PART No.		
54	Bayonet	6-8	0.15	Brown			Type 47
55	"	6-8	0.15	"			" "

MISCELLANEOUS

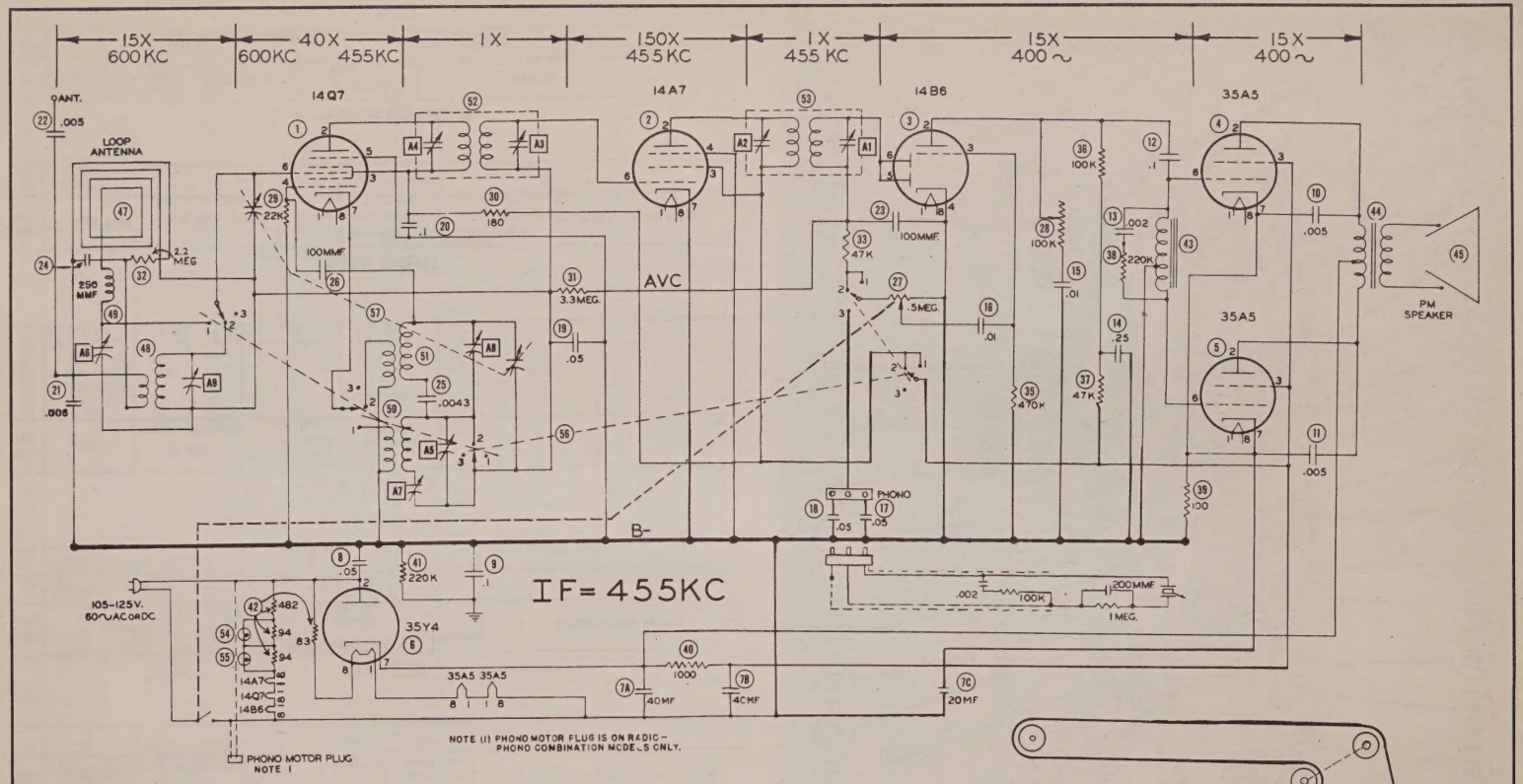
ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
56	Switch		Band-Phono
57	2 Gang Var. Cap.		(17-482 MMF each section)

CHASSIS—BOTTOM VIEW



AIRCASTLE MODELS 6611, 6612, 6613, 6630, 6631, 6632, 6634, 6635

AIRCASTLE MODELS 6611, 6612, 6613, 6630, 6631, 6632, 6634, 6635



NOTE: VOLTAGE AND RESISTANCE READING TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	13V AC	89V DC	89V DC	-4.2V DC	0V.	-3V DC	0V.	25V AC
2	14A7	37V AC	92V DC	92V DC	0V.	0V.	-3V DC	0V.	25V AC
3	14B6	13V AC	58V DC	-.5V DC	0V.	-55V DC	-7V DC	0V.	0V.
4	35A5	35V AC	117V DC	92V DC	82V DC	0V.	0V.	5.6V DC	0V.
5	35A5	35V AC	117V DC	92V DC	44V AC	0V.	0V.	5.6V DC	72V AC
6	35Y4	72V AC	117V DC	0V.	78V AC	0V.	40V DC	120V DC	104V AC

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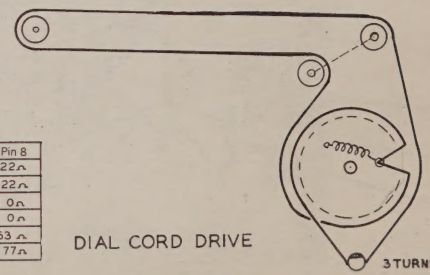
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	12Ω	70Ω	70Ω	22KΩ	0Ω	5MEG.	.5Ω	22Ω
2	14A7	32Ω	70Ω	70Ω	0Ω	260Ω	5 MEG.	0Ω	22Ω
3	14B6	12Ω	217KΩ	360KΩ	0Ω	1.8MEG.	570KΩ	0Ω	0Ω
4	35A5	29Ω	70Ω	70Ω	130KΩ	0Ω	1000Ω	85Ω	0Ω
5	35A5	29Ω	70Ω	70Ω	39Ω	0Ω	1200Ω	85Ω	53Ω
6	35Y4	53Ω	118Ω	INF.	58Ω	0Ω	35Ω	70Ω	77Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS



DIAL CORD DRIVE

475-2

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AVIOLA
MODELS 601, 612

AVIOLA
MODELS 601, 612

AVIOLA MODEL 601

TRADE NAME	Aviola, Models 601, 612
MANUFACTURER	Aviola Radio Corp., Phoenix, Arizona
TYPE SET	AC-DC Operated Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 RF Amp., 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1720KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
500MMF.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap fully open.	Across voice coil.	A1,A2, A3,A4.	Adjust for maximum output.
	Place signal generator output lead near loop antenna. (Not connected to it)	1500KC	1500KC	"	A5	" " " "
	"	"	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

AVIOLA MODELS 601, 6A5

TUBES

ITEM No.	USE	REPLACEMENT DATA: AVIOLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7	12SK7	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	35L6GT/G	35L6GT/G	7AC	
6	Rectifier	35Z5GT/G	35Z5GT/G	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AVIOLA PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	150	R-1241-1	TA-240	PRSA150-40-40	BRD4215	2N514	M-2x40-150	Filter
B	40	150						"	
8	40	150	12101-40	UT-41	PRS150-40	BR4015	TC48	M-40-150	"
9	10	25	12105-10	TA-10	PRS25-10	BR10A	TC22	M-10-25	Cath. Bypass
10	.05	400	12002-05	TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
11	.03	400	12002-03	TC-13	484-03	DT4S3	TP424	S-6-03	Output Plate Bypass
12	.01	400	12002-01	TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
13	.01	400	12002-01	TC-11	484-01	DT4S1	TP421	S-4-01	" "
14	.05	200	12000-05	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
15	.1	200	12000-1	TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
16	.001	600	12004-001	TC-21	684-001	DT6D1	TP404	S-6-001	Ant. Isolation
17	250	500	12010-250	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Audio Plate Bypass
18	250	500	12010-250	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	IF Bypass Diode
19	50	500	12010-50	1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	Osc. Grid Capacitor
20	100	500	12010-100	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	RF Coupling

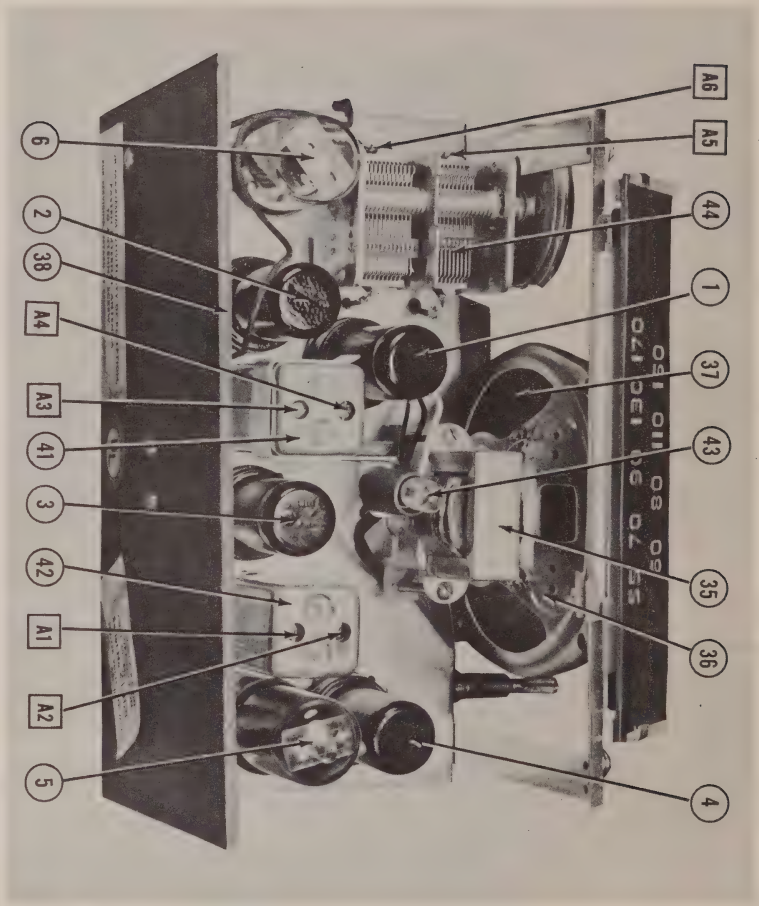
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AVIOLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	500KΩ	1	R-1043-1	MR48	D13-133	M-60-Z	Volume Control-Used in Model 612
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 21A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
21A	1 Meg.	1		UM159	D11-137	AM-61-S	Volume Control-Used in Model 601
B	Shaft			SS25	E	KSS-3	Attach to 21A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AVIOLA PART No.	IRC PART No.	IDENTIFICATION CODES
22	4700Ω	½	11005-472	BTS-4700	Yl.-Vi.-Red RF Plate Load
23	47KΩ	½	11005-473	BTS-47K	Yl.-Vi.-Or. Converter Grid
24	470KΩ	½	11005-474	BTS-470K	Yl.-Vi.-Yl. Line Isolation
25	33KΩ	½	11005-333	BTS-33K	Or.-Or.-Or. Oscillator Grid
26	2.2 Meg.	½	11005-225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
27	47KΩ	½	11005-473	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
28	6.8 Meg.	½	11005-685	BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
29	220KΩ	½	11005-224	BTS-220K	Red-Red-Yl. AF Plate Load
30	470KΩ	½	11005-474	BTS-470K	Yl.-Vi.-Yl. Output Grid
31	150Ω	½	11005-151	BW-½-150	Br.-Grn.-Br. Output Cathode
32	1200Ω	1	11008-122	BTA-1200	Br.-Red-Red Filter
33	330Ω	1	11008-331	BW-1-330	Or.-Or.-Br. Filter
34	150Ω	½	11005-151	BW-½-150	Br.-Grn.-Br. Pilot Light Shunt

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AVIOLA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
35	1600Ω	3.5Ω	140Ω	.65Ω	R-1040-1	A-3876	T22845		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AVIOLA PART No.	JENSEN PART No.		
36	FIELD PM	VC IMP. 3.5Ω	R-1046	ST-105 Mod. P5-X		
37	CONE DIA. 4"	VC DIA. 1/2"	NOT REALILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

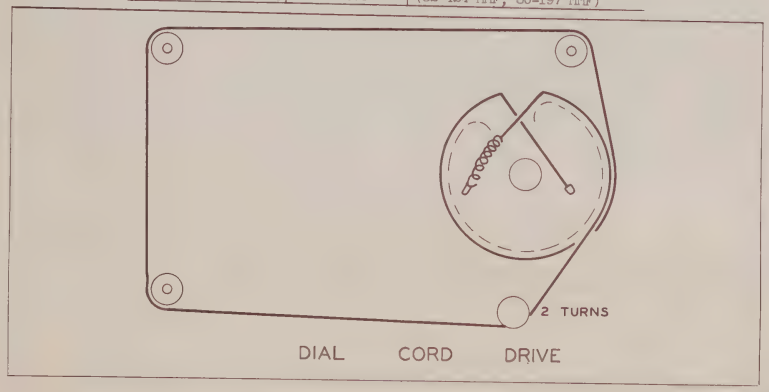
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AVIOLA PART No.	MEISSNER PART No.	
38	Loop Ant.	.1Ω	2.5Ω	R-1237		
39	RF Coil			R-1042		
40	Osc. Coil	1.5Ω	10.5Ω	R-1033	14-1040	
41	Input IF	20Ω	18.5Ω	R-1025-3	16-6666	
42	Output IF	18.5Ω	18.5Ω	R-1025-4	16-6667	

DIAL LIGHT

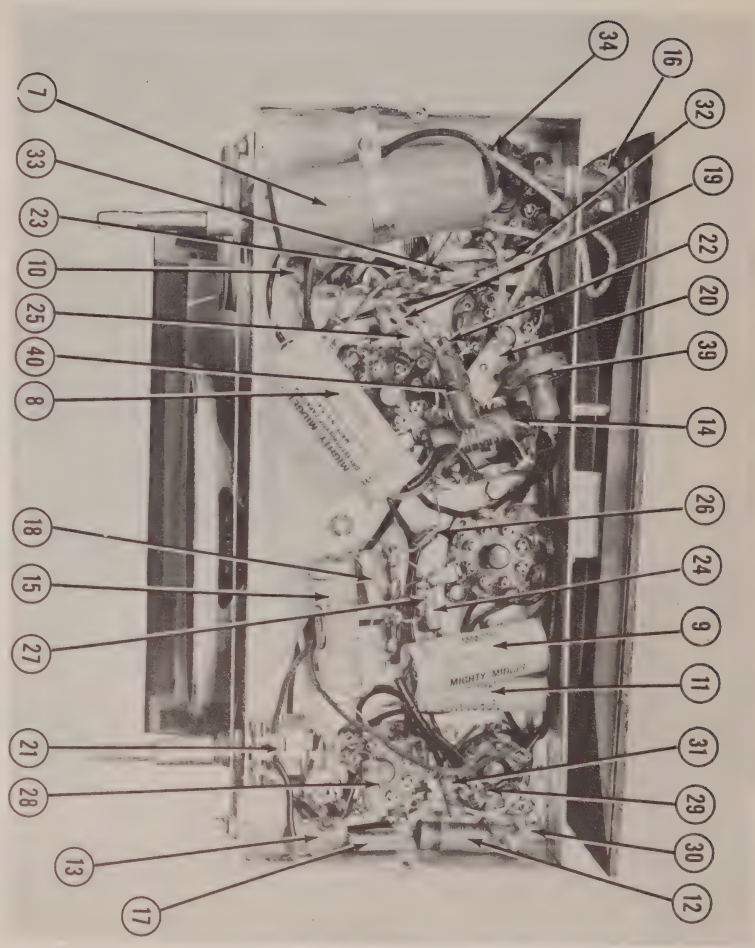
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AVIOLA PART No.		
43	Bayonet	6-8	0.15	Brown			Type 47

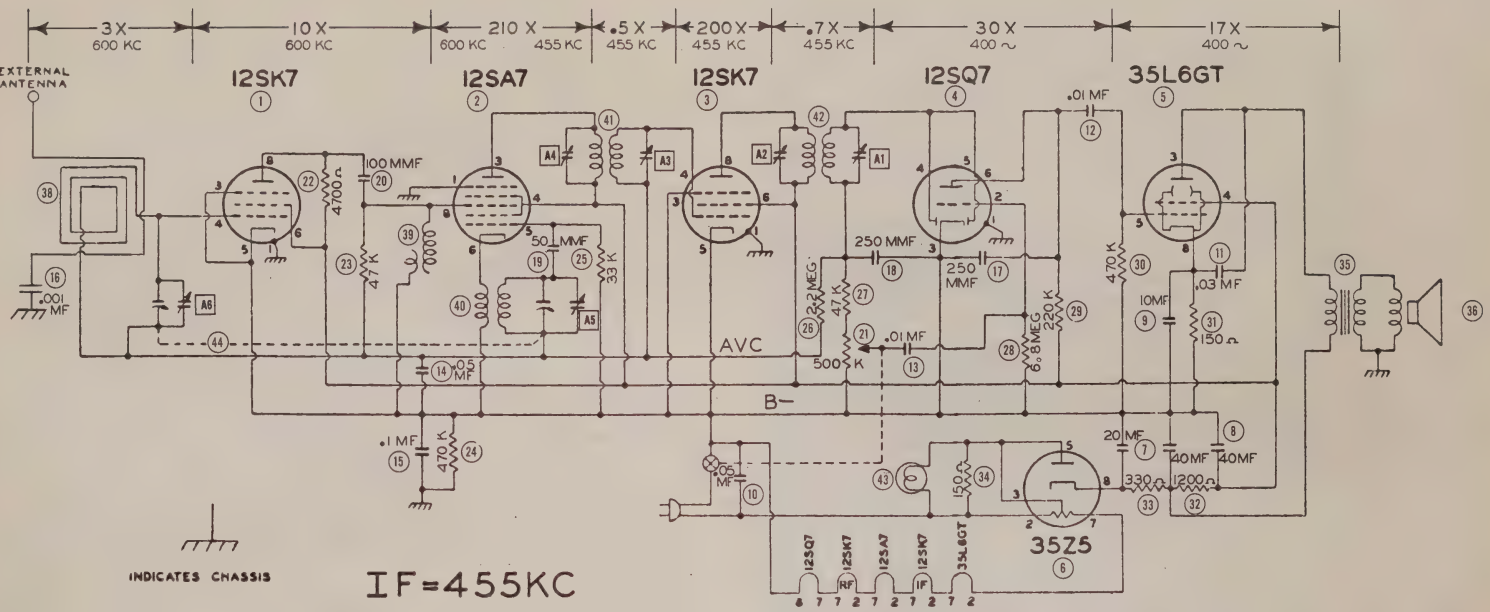
MISCELLANEOUS

ITEM No.	PART NAME	AVIOLA PART No.	NOTES
44	2 Gang Var. Cap.	R-1055	(32-424 MMF, 30-197 MMF)



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	0V	26V.AC	0V.	−1V.DC	0V.	80V.DC	14V.AC	124V.DC
2	12SA7	0V	38V.AC	60V.DC	60V.DC	-4.7V.DC	0V.	26V.AC	-.8V.DC
3	12SK7	0V	50V.AC	0V.	−.8V.DC	0V.	65V.DC	38V.AC	60V.DC
4	12SQ7	0V	−1V.DC	0V.	-1V.DC	−1V.DC	50V.DC	14V.AC	0V.
5	35L6GT/G	0V	85V.AC	100V.DC	65V.DC	0V.	0V.	50V.AC	4.5V.DC
6	35Z5GT/G	0V	117V.AC	113V.AC	0V.	113V.AC	65 V.DC	85V.AC	125V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	480KΩ	24Ω	0Ω	2.5MEG	0Ω	80KΩ	12Ω	100KΩ
2	12SA7	480KΩ	33Ω	90KΩ	90KΩ	35KΩ	1Ω	24Ω	2.5MEG
3	12SK7	480KΩ	50Ω	0Ω	2.5MEG	0Ω	80KΩ	33Ω	90KΩ
4	12SQ7	480KΩ	7.5MEG	0Ω	550KΩ	550KΩ	320KΩ	12Ω	0Ω
5	35L6GT/G	INF.	80Ω	80KΩ	90KΩ	410KΩ	410KΩ	50Ω	150Ω
6	35Z5GT/G	INF.	102Ω	100Ω	0Ω	100Ω	80KΩ	80Ω	80KΩ

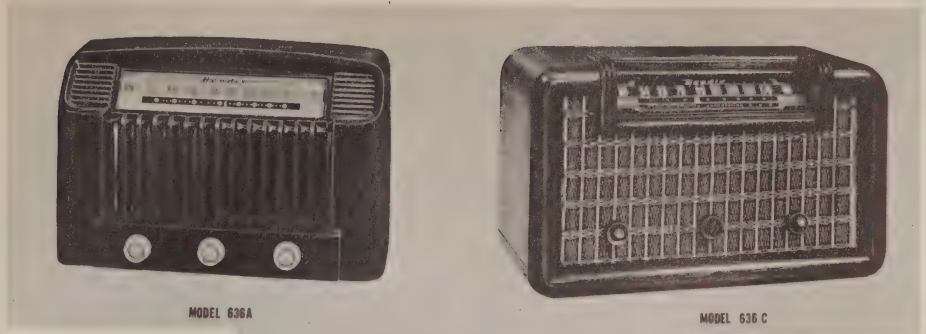
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-3

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



MODEL 636A

MODEL 636 C

MODEL 636 B

BENDIX
MODELS 636 SERIES (A, B, C)

BENDIX MODEL 636A

TRADE NAME	Bendix, Model 636 Series (A, C, B)
MANUFACTURER	Bendix Radio, Div. of Bendix Aviation Corp., Baltimore, Md.
TYPE SET	AC-DC Operated Superheterodyne-With Loop Antenna & Phonograph Provisions
TUBES (SIX)	Types, 14A7 RF Amp., 14Q7 Converter, 14A7 IF Amp., 14B6 Det.-AVC-AF, 35A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	535-1725KC RATING .240 Amps. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer 2-3/16" from left end of dial backplate. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to ext. ant. lead. Low side to chassis.	455KC	Tuning cap open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001 MFD to reduce hum modulation.
50MMFD.	"	1475KC	6-3/4" from left end of dial backplate.	"	A5	Adjust for maximum output.
50MMFD.	"	"	Tune for maximum output.	"	A6,A7.	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	14A7	14A7	8V	
2	Converter	14Q7	14Q7	8AL	
3	IF Amp.	14A7	14A7	8V	
4	Det.-AVC-AF	14B6	14B6	8W	
5	Power Output	35A5	35A5	6AA	
6	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: BENDIX PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	CE3A00	TEL-340#	AF844D#	UP6CJ44#	FP306	DY-604020-150	▲ Filter
B	20	150		LUT-201					"
C	60	150			PRS150-40#	BR2015	TC50		■ "
8	.05	400	CP4T40	TC-15	484-05	DT4S5	TP426	S-4-05	Rect. Bypass
9	.02	400	CP4T34	TC-12	484-02	DT4S2	TP423	S-4-02	Output Plate Bypass
10	.1	200	CP2T51	TC-1	484-.1	DT4P1	TP428	S-4-1	Tone Compensation †
11	.04	400		TC-14	484-04	DT4S4	TP425	S-6-04	" "
12	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling ‡
13	.006	400	CP4T20	TC-26	484-006	DT6D6	TP409	S-6-006	" "
14	.05	400	CP4T40	TC-15	484-05	DT4S5	TP426	S-4-05	Phono Isolation
15	.006	400	CP4T20	TC-26	484-006	DT6D6	TP409	S-6-006	Audio Coupling
16	.1	400	CP4T51	TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
17	.05	400	CP4T40	TC-15	484-05	DT4S5	TP426	S-4-05	IF Screen Bypass
18	.05	400	CP4T40	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
19	.004	600	CP6T16	TC-24	684-004	DT6D4	TP407	S-6-006	Ext. Ant. Isolating
20	220	500	CM5A05	1FM-32	1468-0002	SW5T2	MC237	MO.5-322	Audio Plate Bypass
21	22	500		MS-42	1468-000025	SW5Q2	MC220	MO.5-422	Tone Compensation*
22	47	500	CM5A14	1FM-45	1468-00005	SW5Q5	MC225	MO.5-447	Osc. Grid Capacitor
23	47	500	CM5A14	1FM-45	1468-00005	SW5Q5	MC225	MO.5-447	RF Pri. Shunt
24	3.3		CC9A16						RF Coupling Cer. *

*Not used on all models.
†May be .15 MFD. on some models.
‡May be .05 MFD. on some models.
#Parallel sections for desired capacity.

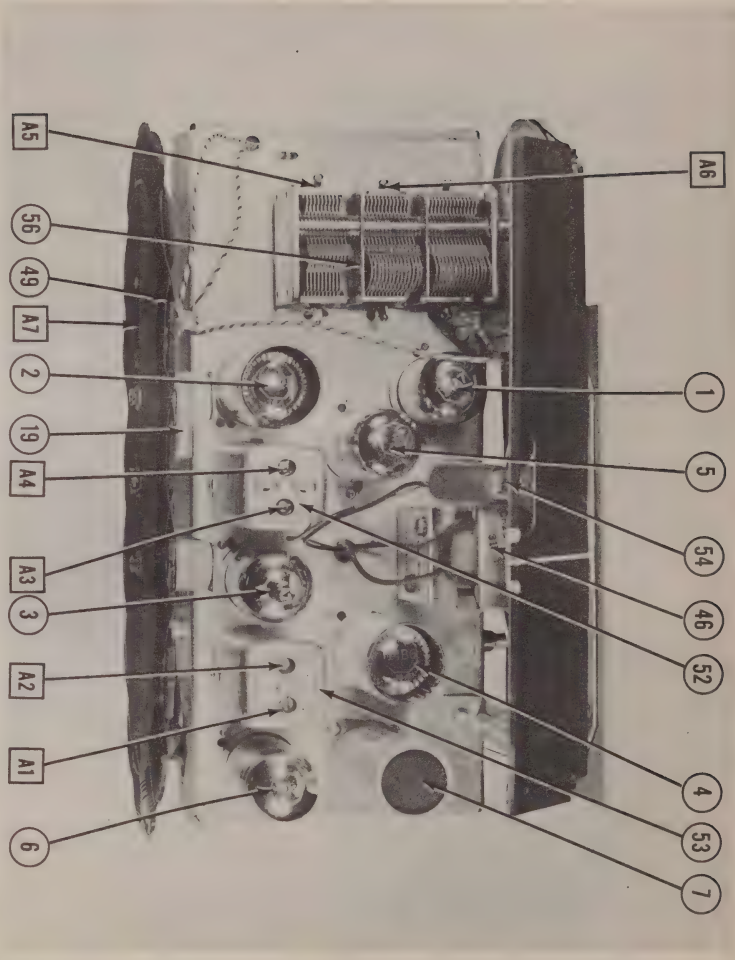
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BENDIX PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	1 Meg.	1		MR53	D13-137	M-63-Z	Volume Control-Later production
B	Shaft			Not Req.	A	Not Req.	Attach to 25A per instructions
C	Switch			M26	41	SW-A	" " " " "
25A	1 Meg.	1	RV4S00	TM234	D17-137X	T-101	Volume Control-Early productions
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 25A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BENDIX PART No.	IRC PART No.	IDENTIFICATION CODES
26	220Ω	½	RC1H16	BW-½-220	Red-Red-Br. RF Cathode
27	22KΩ	½	RC1H40	BTS-22K	Red-Red-Or. Oscillator Grid
28	3.3 Meg.	½	RC1H68	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
29	470Ω	½	RC1H20	BTS-470	Yl.-Vi.-Br. IF Plate Decoupling
30	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl. Line Isolation
31	470KΩ	½	RC1H58	BTS-470K	Yl.-Vi.-Yl. Diode Load
32	22KΩ	½	RC1H40	BTS-22K	Red-Red-Or. Tone Compensation-See Note 1
33	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl. " " " " "
34	15KΩ	½	RC1H38	BTS-15K	Br.-Grn.-Or. " " " " "
35	6800Ω	½	RC1H34	BTS-6800	Blue-Gray-Red " " " " "
36	1000Ω	½		BTS-1000	Br.-Blk.-Red " " " " 2

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BENDIX PART No.	IRC PART No.	
37	2200Ω	½		BTS-2200	Red-Red-Red " " " " 2
38	4.7 Meg.	½	RC1H70	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
39	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl. AF Plate Load
40	470KΩ	½	RC1H58	BTS-470K	Yl.-Vi.-Yl. Output Grid
41	150Ω	1	RW1B14	BW-1-150	Br.-Grn.-Br. Output Cathode
42	2200Ω	2	RC4G28	BT-2-2200	Red-Red-Red Filter
43	4700Ω	½	RC1H32	BTS-4700	Yl.-Vi.-Red "
44	33Ω	½		BW-½-33	Or.-Or.-Blk. Surge Limiter
45	100Ω	1	RW1A06	BW-1-100	Br.-Blk.-Br. Pilot Light Shunt

Note 1 - Used in early production only.
Note 2 - Used in later production only.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BENDIX PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
46	2300Ω	3.1Ω	170Ω	.4Ω	TA0001	A-3876 $	T22S45 $		$Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BENDIX PART No.	JENSEN PART No.		
	FIELD	VC IMP.				
47	PM	3.1Ω	SP4000			
	CONE DIA.	VC DIA.				
48A	4"x6"	1/2"	CS4000			
B			CS4001			Code 252
C			CS4002			Code 328 Alternate Cone
D			CS4006			Code 270 " "
E			CS4007			Code 191 " "
						Code 371 " "

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	BENDIX PART No.	MEISSNER PART No.	
49	Loop Ant.	.3Ω	.5Ω	AL0003		
50	RF Coil	57Ω	5.5Ω	TR6L00	14-1027	
51	Osc. Coil	.5Ω	4Ω	L06B00	14-1040	
52	Input IF	21Ω	21Ω	T10C01	16-6658	
53	Output IF	21Ω		T10D01	16-6670	

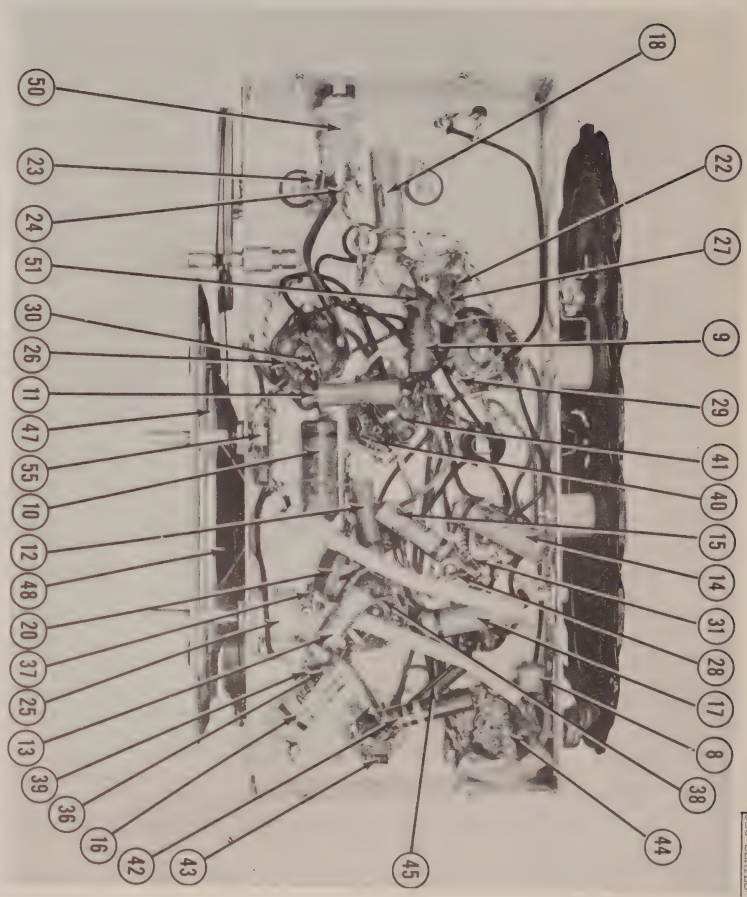
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					BENDIX PART No.		
54	Bayonet	6-8	0.15	Brown			Type 47

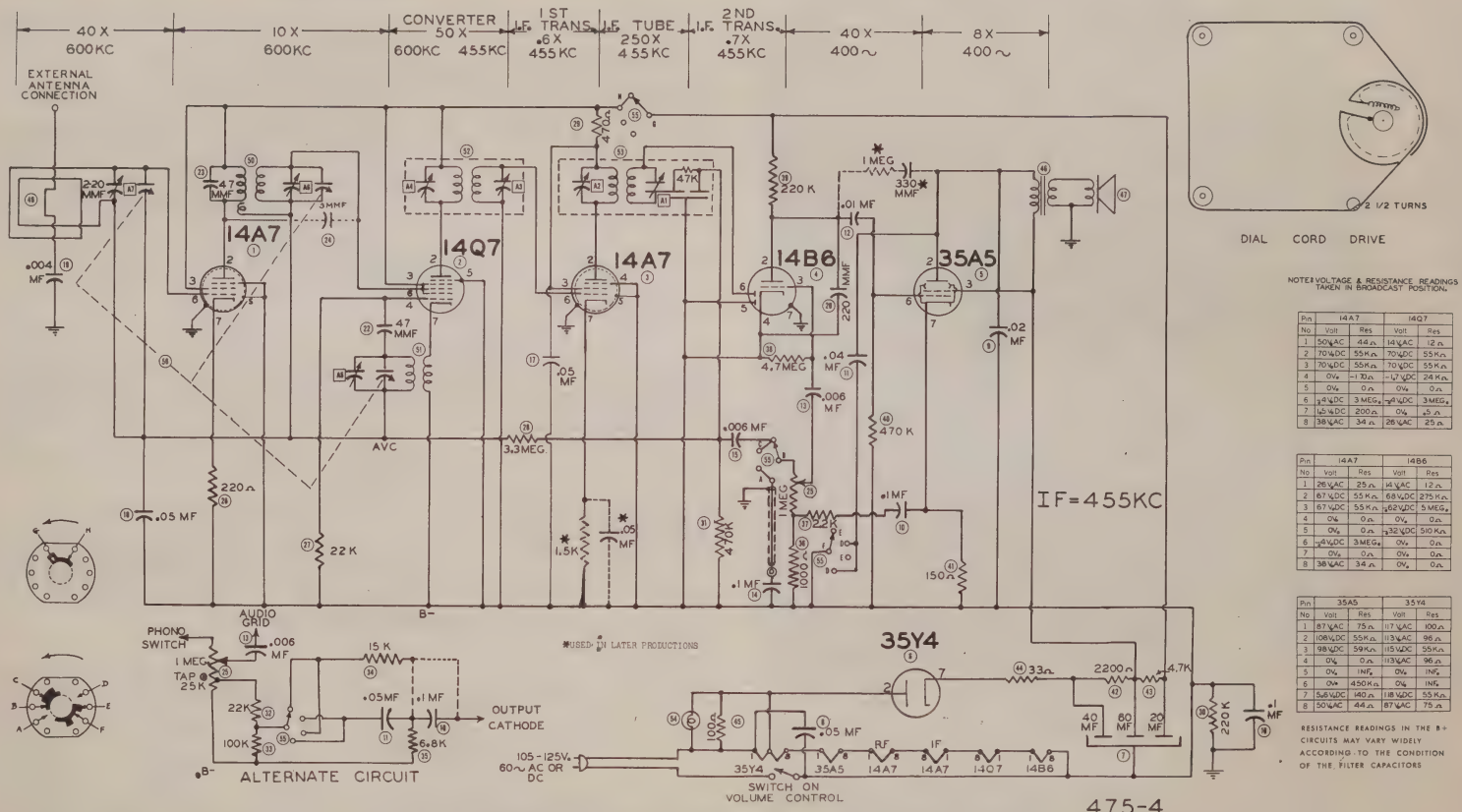
MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
55	Switch	SR4C00	Radio-Phono (3 Pole-4 Position)
56	3-Gang Var. Cap.	CV0C00	(27-467 MMF, 27-467 MMF, 31-213 MMF)
	Dial Glass	DS0A01	
	Dial Pointer	ID0M02	

CHASSIS—BOTTOM VIEW



BENDIX 836 SERIES (A,C,E)



NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

Pin No	14A7 Volt	14A7 Res	14Q7 Volt	14Q7 Res
1	50 VAC	44 Ω	141 VAC	12 Ω
2	70 VDC	55 KΩ	70 VDC	55 KΩ
3	70 VDC	55 KΩ	70 VDC	55 KΩ
4	0 V.	-1.0 Ω	-1.7 VDC	24 KΩ
5	0 V.	0 Ω	0 V.	0 Ω
6	3.4 VDC	3 MEG.	-3.4 VDC	3 MEG.
7	65 VDC	200 Ω	0 V.	5 Ω
8	38 VAC	34 Ω	28 VAC	25 Ω

Pin No	14A7 Volt	14A7 Res	14B6 Volt	14B6 Res
1	28 VAC	25 Ω	14 VAC	12 Ω
2	67 VDC	55 KΩ	68 VDC	275 KΩ
3	67 VDC	55 KΩ	62 VDC	5 MEG.
4	0 V.	0 Ω	0 V.	0 Ω
5	0 V.	0 Ω	32 VDC	50 KΩ
6	-3.4 VDC	3 MEG.	0 V.	0 Ω
7	0 V.	0 Ω	0 V.	0 Ω
8	38 VAC	34 Ω	0 V.	0 Ω

Pin No	35A5 Volt	35A5 Res	35Y4 Volt	35Y4 Res
1	87 VAC	75 Ω	117 VAC	100 Ω
2	108 VDC	55 KΩ	113 AC	96 Ω
3	98 VDC	59 KΩ	115 VDC	55 KΩ
4	0 V.	0 Ω	113 AC	96 Ω
5	0 V.	INF.	0 V.	INF.
6	0 V.	450 KΩ	0 V.	INF.
7	56 VDC	140 Ω	118 VDC	55 KΩ
8	50 VAC	44 Ω	87 VAC	75 Ω

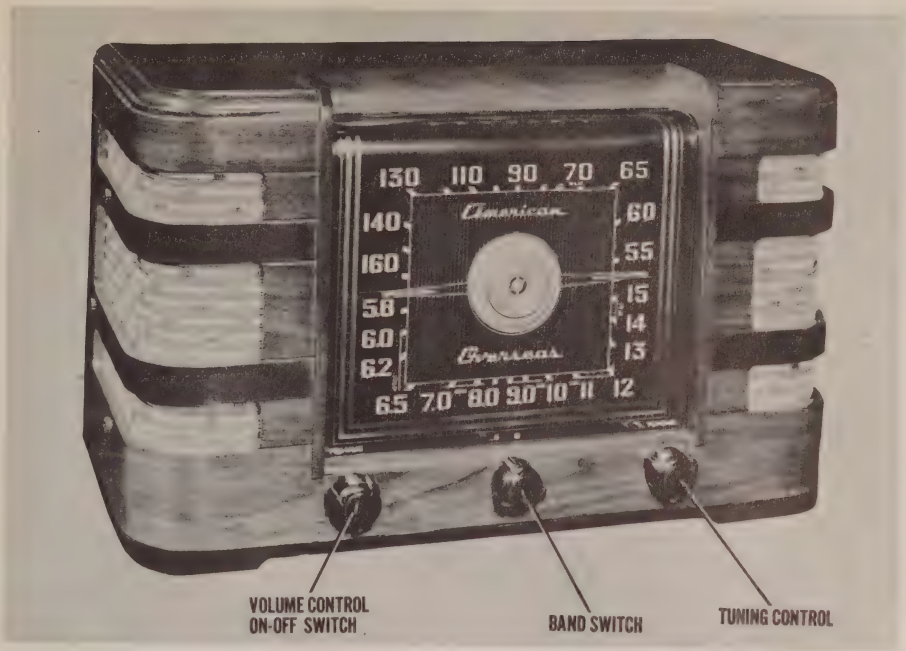
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-4

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



CROSLEY
MODELS 46 FA, 46 FB

CROSLEY
MODELS 46 FA, 46 FB

CROSLEY MODEL 46FB

TRADE NAME	Crosley, Model 46FA, 46FB
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types, 1A7GT/G Mixer, 1N5GT/G IF Amp., 1H5GT/G Det.-AVC-AF, 1A5GT/G Power Output.
RATING	210MA @ 1.8V DC & 6MA @ 87V DC
POWER SUPPLY	1½ Volt "A" Battery & 90 Volt "B" Battery in Pack Form
TUNING RANGE—BROADCAST	540-1680KC **SHORT WAVE** 5.8-15MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer parallel with base of dial. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
200MMFD	High side to ext. ant. lead. Low side to chassis.	455KC	BC	1620KC	Across voice coil	A1,A2, A3.	Adjust for maximum output
400Ω	"	15.3MC	SW	15.3MC	"	A4	Adjust for maximum output Tune receiver to 14.4MC to check for image. If image is not heard readjust A4 at 15.3MC.
400Ω	"	15MC	"	Tune for maximum output.	"	A5	Rock variable and adjust for maximum output.
200MMFD	"	1620KC	BC	1620KC	"	A6	Adjust for maximum output
200MMFD	"	1400KC	"	Tune for maximum output.	"	A7	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mixer	1A7GT/G	1A7GT/G	7Z	
2	IF Amp.	1N5GT/G	1N5GT/G	5Y	
3	Det.-AVC-AF	1H5GT/G	1H5GT/G	5Z	
4	Power Output	1A5GT/G	1A5GT/G	6X	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	15	140	W-49664	TA-116	PRSA150-20-20	BRD2215	2N509	M-2x20-150	Pwr. Supp. Bypass
B	15	140							" " "
6	.0022	600	39001-9	TC-22	684-002	DT6D2	TP405	S-6-002	Output Plate Bypass
7	.0033	600	39001-10	TC-23	684-003	DT6D3	TP406	S-6-003	Audio Coupling
8	.0033	600	39001-10	TC-23	684-003	DT6D3	TP406	S-6-003	" "
9	.022	200	39001-63	TC-12	484-02	DT4S2	TP423	S-4-02	Conv. Screen Bypass
10	.05	200	39001-65	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
11	.0033	600	39001-10	TC-23	684-003	DT6D3	TP406	S-6-003	Osc. Anode Bypass
12	100	500	39004-7	1FM-31	1468-0001	5W5T1	MC235	M0.5-31	Output Grid Bypass
13	75	500	39004-6	1FM-475	1468-000075		MC230		Osc. Grid Capacitor
14	580	500	GC210685143						Fixed Padder

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	1 Meg.	1	B-130520-3	MR63	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 15A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

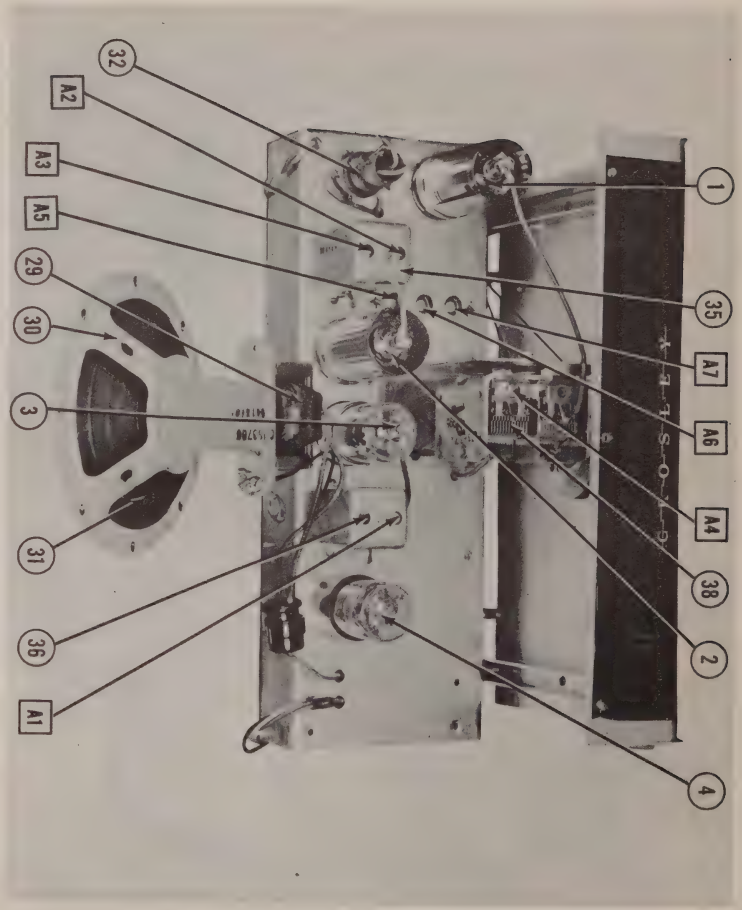
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES
16	3.3 Meg.	½	39281-34	BTS-3.3 Meg.	Or.-Or.-Grn. Converter Grid
17	250KΩ	½		BTS-270K	Red-Grn.-Yl. Oscillator Grid
18	47KΩ	½	39281-23	BTS-47K	Yl.-Vi.-Or. Converter Screen Dropping
19	5 Meg.	½		BTS-4.7 Meg.	Grn.-Blk.-Grn. AVC Network
20	10 Meg.	½	39281-37	BTS-10 Meg.	Br.-Blk.-Blue AVC Network
21	150KΩ	½	39281-26	BTS-150K	Br.-Grn.-Yl. Diode RF Filter
22	3300Ω	½	39281-16	BTS-3300	Or.-Or.-Red Series Volume Control
23	5 Meg.	½		BTS-4.7 Meg.	Grn.-Blk.-Grn. AF Grid
24	1 Meg.	½	39281-31	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
25	2.2 Meg.	½	39281-33	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
26	4700Ω	1		BTA-4700	Yl.-Vi.-Red Filter
27	820Ω	½	39279-24	BTS-820	Gray-Red-Br. Bias
28	33Ω	½		BW-½-33	Or.-Or.-Blk. Parasitic Suppressor

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
29	15KΩ	3.1Ω	700Ω	.5Ω	Part of C-133786	A-3881*	T22S47*		*Drill new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

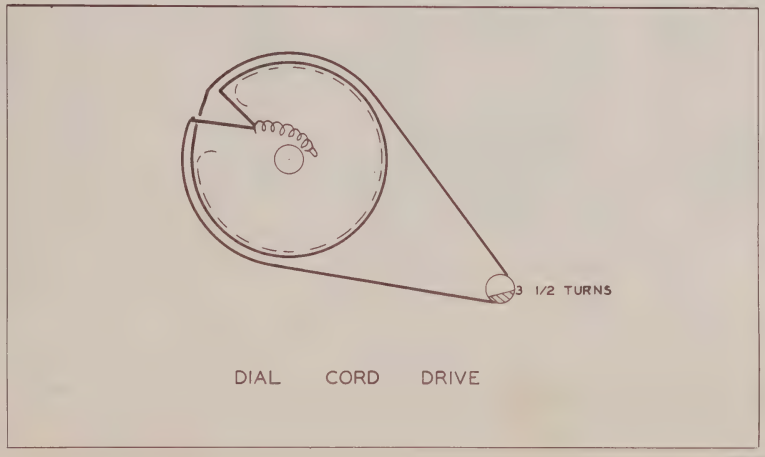
ITEM No.	RATINGS		REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107		
30	PM	3.1Ω	C-133786	Mod. P5-V		
	CONE DIA.	VC DIA.				
31	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

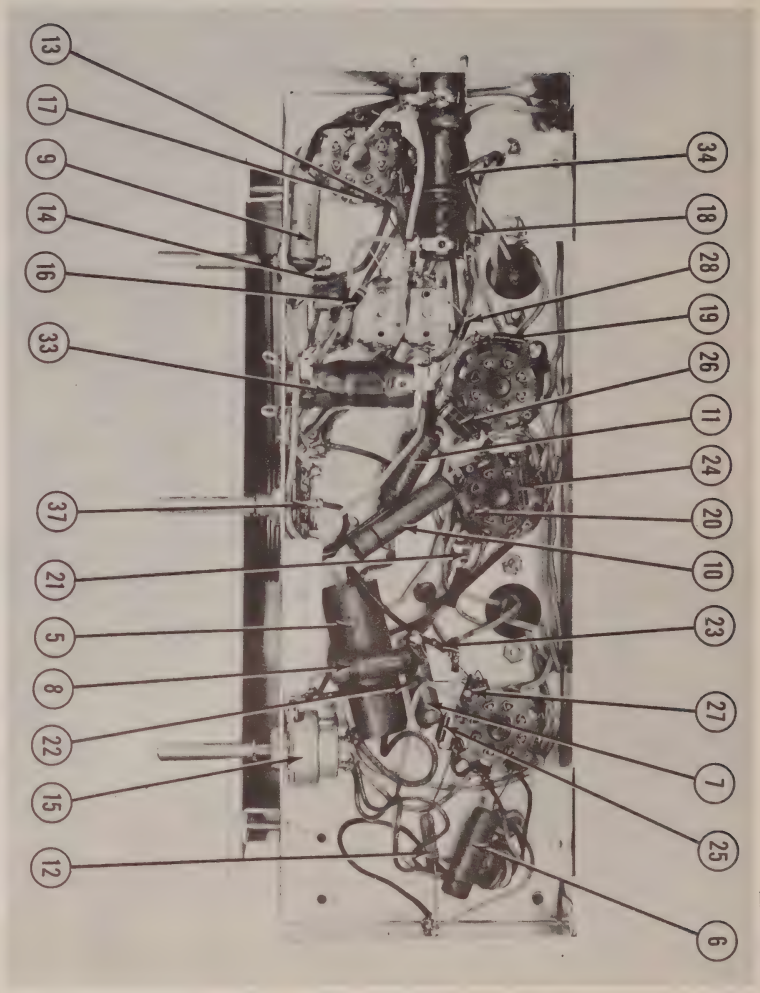
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: MEISSNER PART No.	
32	BC Ant. Coil	48Ω	4.3Ω	AW-133763	14-1026	
33	SW Ant. Coil	.5Ω	.1Ω	AW-133777	14-1044	
34A	BC Osc. Coil	2.3Ω	5Ω	AW-133757		34A & 34B wound on same form
34B	SW Osc. Coil	.3Ω	.3Ω			
35	Input IF	16.5Ω	17Ω	AW-134348	16-6658	
36	Output IF	41Ω	16.5Ω	AW-134349		

MISCELLANEOUS

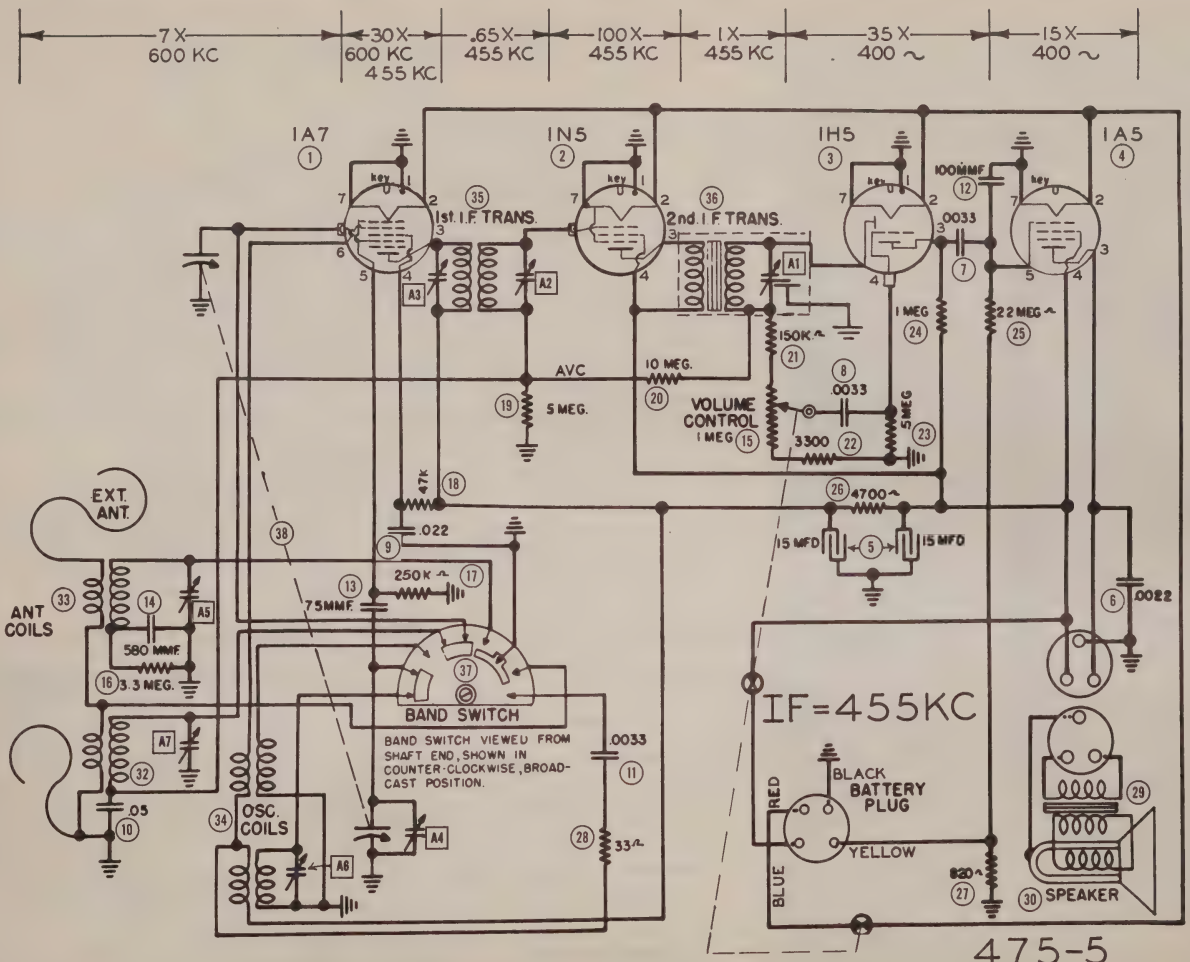
ITEM No.	PART NAME	CROSLEY PART No.	NOTES
37	Bandswitch	W-133712	
38	2 Gang Var. Cap	E-134995	(17-455MMF, 19-258 MMF)
39	Battery Pack	CR69	A-B Pack 1½V & 90V.
A5	Trimmer Assby.	B-132386-5	SW Ant. Adj.
A6			BC Osc. Adj.
A7			BC Ant. Adj.
	Dial Glass	C-132668	
	Cabinet	R-134593	Model 46FA
	"	R-134594	
	Dial Pointer	B-134571	



CHASSIS—BOTTOM VIEW



CROSLEY MODELS 46FA, 46FB



Pin	1A7GT		1N5GT	
No.	Volt.	Res	Volt	Res.
1	0V.	0Ω	0V.	0Ω
2	1.8 V.DC	*	1.8 V.DC	*
3	77 V.DC	800 KΩ	87 V.DC	800 KΩ
4	48 V.DC	850KΩ	87 V.DC	850KΩ
5	-1 V.DC	250 KΩ	77 V.DC	800 KΩ
6	77 V.DC	800 KΩ	0V.	0Ω
7	0V.	*	0V.	*
8	0V.	0Ω	0V.	3 MEG.
Cap	0V.	3 MEG.	0V.	3 MEG.

Pin	1H5GT		1A7GT	
No.	Volt.	Res	Volt	Res.
1	0V.	0Ω	0V.	INF.
2	1.8 V.DC	*	1.8 V.DC	*
3	55 V.DC	1 MEG.	87 V.DC	900 KΩ
4	-.8 V.DC	1 MEG.	87 V.DC	900 KΩ
5	-.8 V.DC	1 MEG.	-2 V.DC	2.5MEG.
6	0V.	3 MEG.	-6 V.DC	840Ω
7	0V.	*	0V.	*
8	87 V.DC	900KΩ	87 V.DC	900KΩ
Cap	0V.	5MEG.		

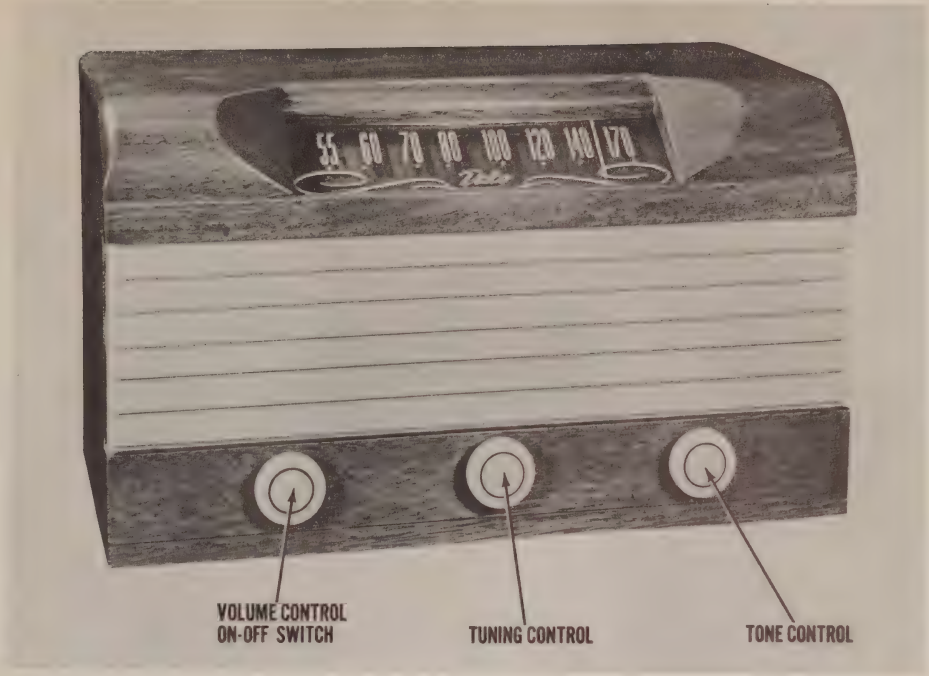
* DO NOT USE OHMMETER TO MAKE THESE MEASUREMENTS

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

DELCO
MODELS R-1227, R-1228, R-1229



DELCO
MODELS R-1227, R-1228, R-1229

DELCO MODEL R-1229

TRADE NAME	Delco, Models R-1227, R-1228, R-1229
MANUFACTURER	Delco Radio, Div. of GM Corp., Kokomo, Ind.
TYPE SET	AC-DC Operated Superheterodyne with Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7 Converter, 12SK7GT IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT/G Power Output, 35Z5GT/G Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1720KC RATING .250 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum and output of signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.02 MFD.	High side to grid 12SA7. (Pin 8). Low side to B-.	456KC	Tuning capacitor fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD.	High side to ext. ant. clip. Low side to chassis.	1720KC	"	"	A5	Adjust for maximum output.
200MMFD.	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

DELCO MODELS
R-1227, R-1228, R-1229

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		DELCO PART No.	STANDARD REPLACEMENT		
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	35L6GT/G	35L6GT/G	7AC	
6	Rectifier	35Z5GT/G	35Z5GT/G	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DELCO PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	
7A	40	150	1217026	TA-440	PRSA150-40-40	BRD4415	2N511	DSB-2x40-150	Filter - Red
B	40	150							" - Blue
8	.05	600	7230592	TC-15	684-05	DT6S5	TP415	S-6-05	Rect. Bypass
9	.01	600	1208600	TC-11	684-01	DT6S1	TP410	S-6-01	Output Plate Bypass
10	.005	600	7230912	TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
11	.002	600	1209148	TC-22	684-002	DT6D2	TP405	S-6-002	Tone Compensation
12	.001	600	1212097	TC-21	684-001	DT6D1	TP404	S-6-001	Audio Coupling
13	.01	600	1208600	TC-11	684-01	DT6S1	TP410	S-6-01	Tone Compensation
14	.1	400	1207908	TC-1	484-.1	DT4P1	TP428	S-4-1	AVC Filter
15	.05	600	7230592	TC-15	684-05	DT6S5	TP415	S-6-05	Ant. Coupling
16	.2	400	7231594	TC-2	484-.2	DT4S2	TP429	S-4-2	Line Isolation
17	100	500		1FM-31	1468-0001	SW5T1	MC235	M0.5-31	Audio Plate Bypass
18	150	500	7230893	1FM-315	1468-00015	SW5T15	MC236	M0.5-315	RF Coupling

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	DELCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
19A	500KΩ	1	1216505	MRT427	D13-133X	T-78	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

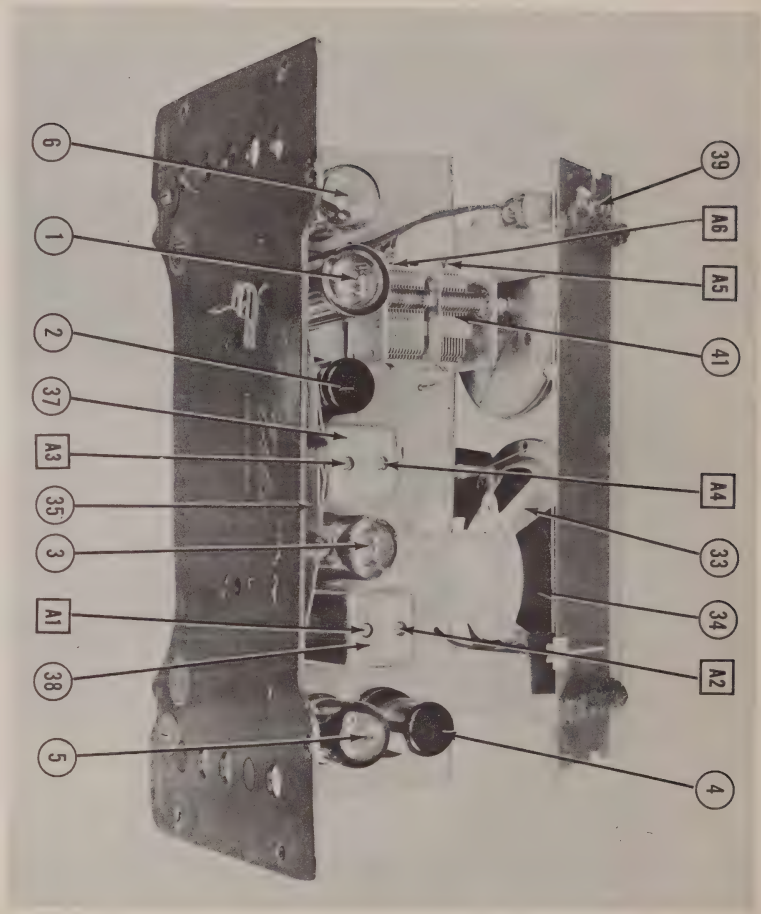
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DELCO PART No.	IRC PART No.	
20	390Ω	½	1214546	BTS-3900	Or.-White-Red RF Plate Load
21	47KΩ	½	1214553	BTS-47K	Yl.-Vi.-Or. Converter Grid
22	22KΩ	½	1214550	BTS-22K	Red-Red-Or. Oscillator Grid
23	3.3 Meg.	½	1214564	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
24	56KΩ	½	1213287	BTS-56K	Grn.-Blue-Or. Tone Compensation
25	10 Meg.	½	1215548	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
26	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. AF Plate Load
27	470KΩ	½	1214559	BTS-470	Yl.-Vi.-Yl. Output Grid
28	150Ω	½	1213220	BW-½-150	Br.-Grn.-Br. Output Cathode
29	1000Ω	1	1211037	BTA-1000	Br.-Blk.-Red Filter
30	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. Line Isolating
31	33Ω	½	1214538	BW-½-33	Or.-Or.-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DELCO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
32	3000Ω	3.4Ω	210Ω	.85Ω	1216557	A-3876*	T22S45*		*Bend mounting tabs down, and mount same as original.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DELCO PART No.	JENSEN PART No.		
33A B	FIELD PM	VC IMP. 3.4Ω	1217362 1217361	ST-105† Mod. P5-X		†Fabricate new mounting bracket. Alternate Speaker
34	CONE DIA. 4-3/4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

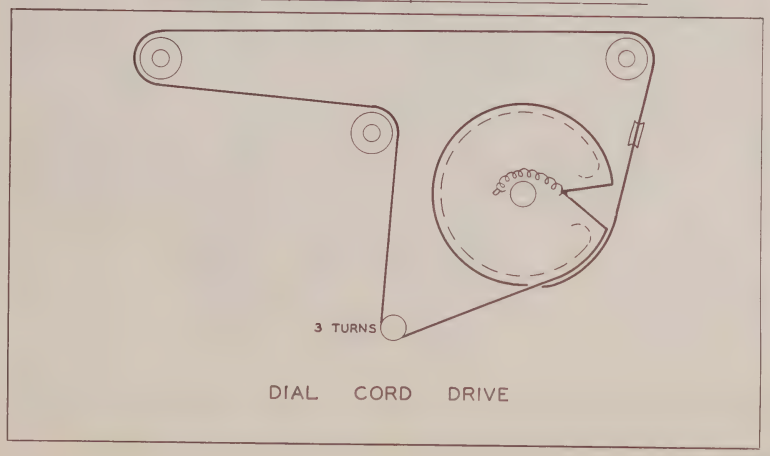
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	DELCO PART No.	MEISSNER PART No.	
35	Loop Ant.	.1Ω	1.5Ω	1216937		
36	Osc. Coil	.9Ω	6Ω	1216915	14-1040	Add 50MMFD from grid to high side of tuning cap.
37	Input IF	18Ω	18Ω	1216605	16-6658	
38	Output IF	18.5Ω		1216570	16-6670	

DIAL LIGHT

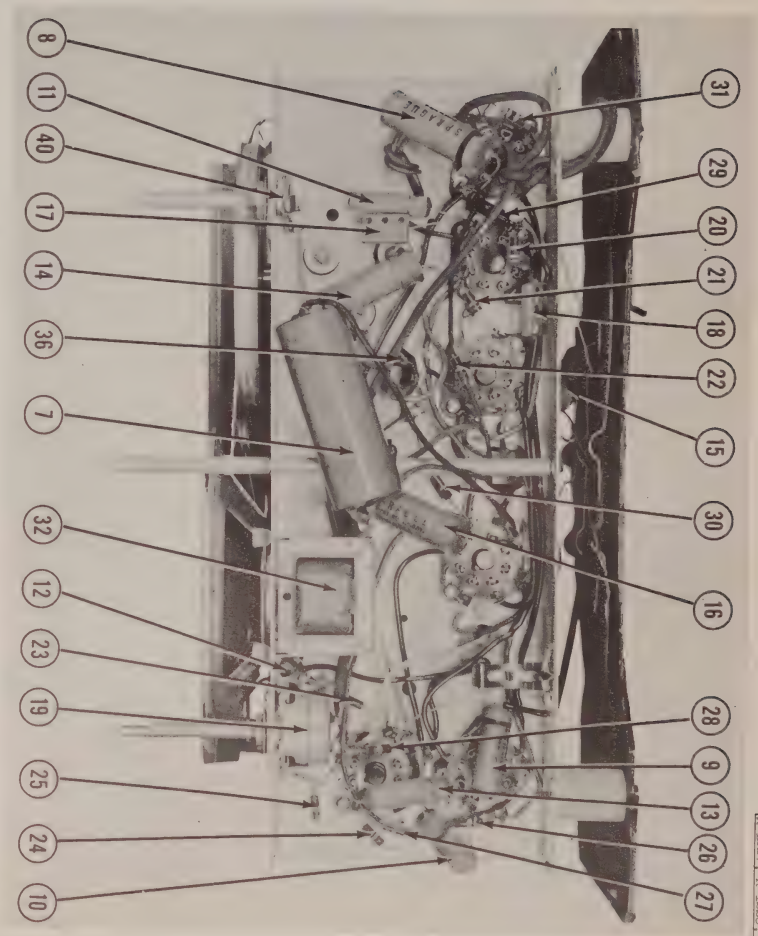
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					DELCO PART No.		
39	Bayonet	6-8V	0.15A	Brown	47		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	DELCO PART No.	NOTES
40	Tone Switch	1216544	
41	2 Gang Var. Cap.	1217414	(27-500MMF, 26-192MMF)
	" " " "	1217415	Alternate
	Dial Pointer	1216562	
	Dial Glass	1217156	

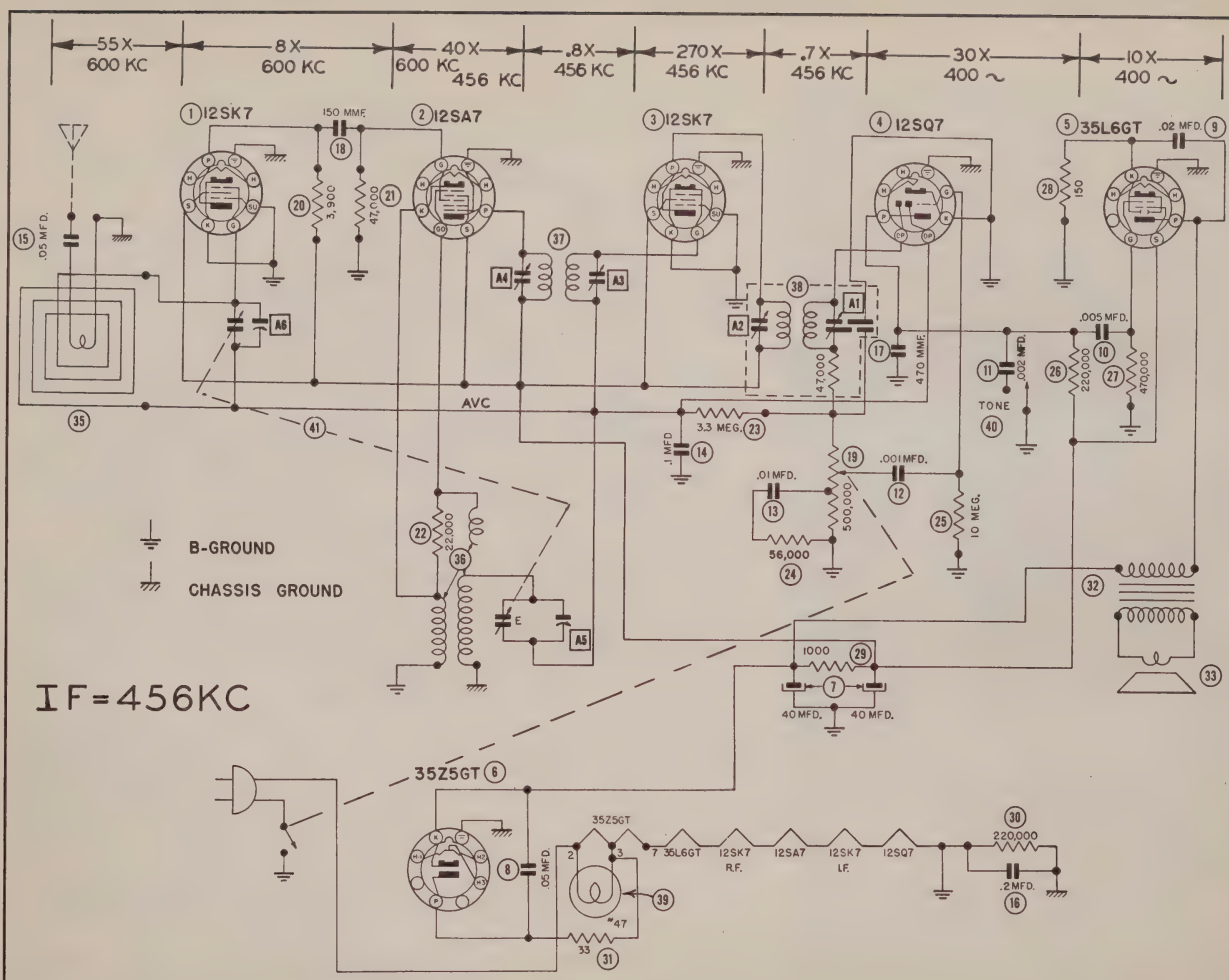


CHASSIS—BOTTOM VIEW



DELCO MODELS R-1227, R-1228, R-1229

R-1227, R-1228, R-1229
DELCO MODELS



Pin No.	12SK7GT Volt.	12SK7GT Res	12SA7 Volt	12SA7 Res.
1	0V.	230KΩ	0V.	230KΩ
2	37 V. AC	34 Ω	26 V. AC	24 Ω
3	0V.	0Ω	80 V. DC	100KΩ
4	-.5 V. DC	4 MEG.	80 V. DC	100KΩ
5	0V.	0Ω	-.4 V. DC	22 KΩ
6	80 V. DC	100 KΩ	0V.	.5 Ω
7	49 V. AC	44 Ω	37 V. AC	34 Ω
8	45 V. DC	104 KΩ	-.05 V. DC	44 KΩ

Pin No.	12SK7GT Volt.	12SK7GT Res	12SQ7 Volt	12SQ7 Res.
1	0V.	230KΩ	0V.	230KΩ
2	13 V. AC	12 Ω	-.7 V. DC	10 MEG.
3	0V.	0Ω	0V.	0Ω
4	-.5 V. DC	4 MEG.	-.5 V. DC	4 MEG.
5	0V.	0Ω	-.3 V. DC	510 KΩ
6	80 V. DC	100 KΩ	60 V. DC	320KΩ
7	26 V. AC	24 Ω	13 V. AC	12 Ω
8	80 V. DC	100 KΩ	0V.	0Ω

Pin No.	35L6GT Volt.	35L6GT Res	35Z5GT Volt	35Z5GT Res.
1	0V.	230KΩ	0V.	230KΩ
2	86 V. AC	72 Ω	117 V. AC	97 Ω
3	110 V. AC	100 KΩ	113 V. AC	94 Ω
4	80 V. DC	100KΩ	0V.	INF.
5	0V.	510 KΩ	110 V. AC	127 Ω
6	0V.	52 KΩ	0V.	INF.
7	49 V. AC	44 Ω	86 V. AC	72 Ω
8	4.2 V. DC	125 Ω	115 V. DC	100 KΩ

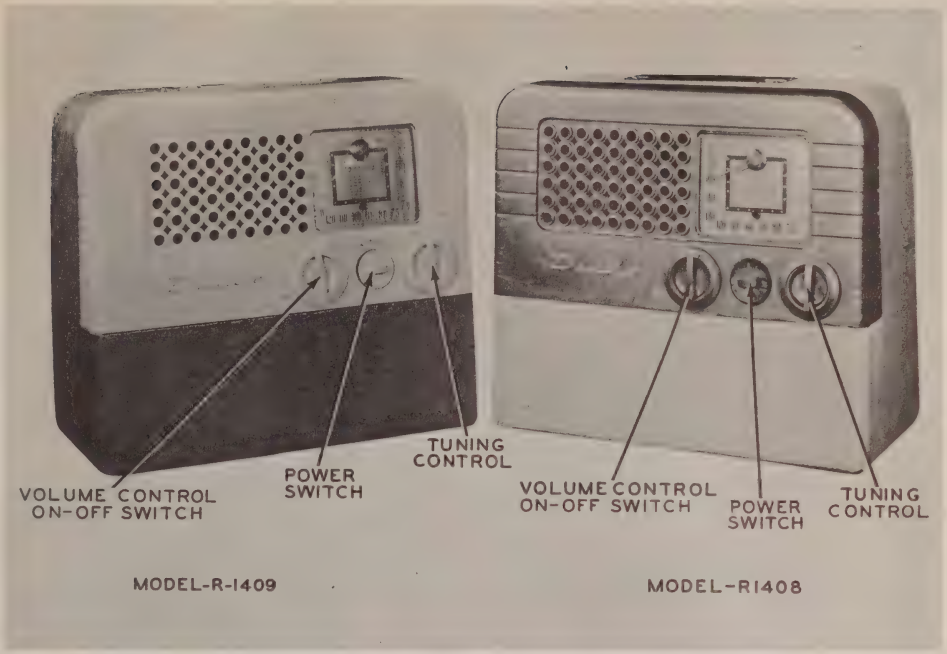
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 475-6

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DELCO
MODELS R-1408, R-1409



TRADE NAME	Delco, Models R-1408, R-1409
MANUFACTURER	Delco Radio, Div. of GM Corp., Kokomo, Ind.
TYPE SET	Three Power Portable Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 2 - 35Z5GT Rectifier.
RATING	.395 Amps. @ 117 Volts AC - 56MA @ 7.5 Volts DC & 9.1 MA @ 87Volts DC
POWER SUPPLY	105-125 Volts AC-DC or 7½ Volt "A" Battery & 90 Volt "B" Battery in Pack Form
TUNING RANGE—BROADCAST	540-1720KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn variable fully closed and set pointer parallel with top of dial at low freq. end of dial. Use battery power whenever available. When ac power is used, use isolation transformer if available. If not, connect a capacitor in series with low side of signal general and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 1A7. Low side to B-.	456KC	Tuning capacitor fully open.	Across voice coil	A1, A2, A3, A4.	Adjust for maximum output. If ac power is used without isolation transformer reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD	High side to ext. ant. lead. Low side to ext. grd. lead.	1720KC	"	"	A5	Adjust for maximum output.
200MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "
200MMFD	"	600KC	"	"	A7	Rock variable and adjust for maximum output. Repeat last three steps until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

DELCO MODELS R-1436, R-1409

TUBES

ITEM No.	USE	REPLACEMENT DATA: DELCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1A7GT	1A7GT	7Z	
2	IF Amp.	1N5GT	1N5GT	5Y	
3	Det.-AVC-AF	1H5GT	1H5GT	5Z	
4	Power Output	3Q5GT	3Q5GT	7AP	
5	Rectifier	35Z5GT	35Z5GT	6AD	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DELCO PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	1217139	EL-340	AF888D	UP9DJ48		DY-419†	♠ Filter
B	40	150							▲ "
C	40	150			PRS25-100				■ "
D	160	25		UHC-202	PRS25-100	BRH251		M-250-25	Fil. Bypass
8	40	25	1217140	TA-50	PRS25-50	BR502	TC29	M-50-25	Filament Bypass
9	.01	600	1208600	TC-11	684-01	DT6S1	TP410	S-6-01	Line Filter
10	.1	400	1207908	TC-1	484-.1	DT4P1	TP428	S-4-1	Neon Ind. Bypass
11	.2	400	7240579	TC-2	484-.2	DT4P2	TP429	S-4-2	Line Isolation
12	.005	600	7230912	TC-25	684-005	DT6D5	TP408	S-6-005	Output Plate Bypass
13	.001	600	1212097	TC-21	684-001	DT6D1	TP404	S-6-001	Audio Coupling
14	.01	600	1208600	TC-11	684-01	DT6S1	TP410	S-6-01	" "
15	.01	600	1208600	TC-11	684-01	DT6S1	TP410	S-6-01	IF Grid Filter
16	.2	400	7240579	TC-2	484-.2	DT4P2	TP429	S-4-2	RF Bypass Pwr. Supp.
17	.2	400	7240579	TC-2	484-.2	DT4P2	TP429	S-4-2	IF Fil. Bypass
18	.2	400	7240579	TC-2	484-.2	DT4P2	TP429	S-4-2	Conv. Fil. Bypass
19	.01	600	1208600	TC-11	684-01	DT4S1	TP410	S-6-01	Conv. Screen Bypass
20	.05	600	7230592	TC-15	684-05	DT6S5	TP415	S-6-05	AVC Filter
21	100	500	1210275	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Audio Plate Bypass

† Do not use bypass section.

CONTROLS

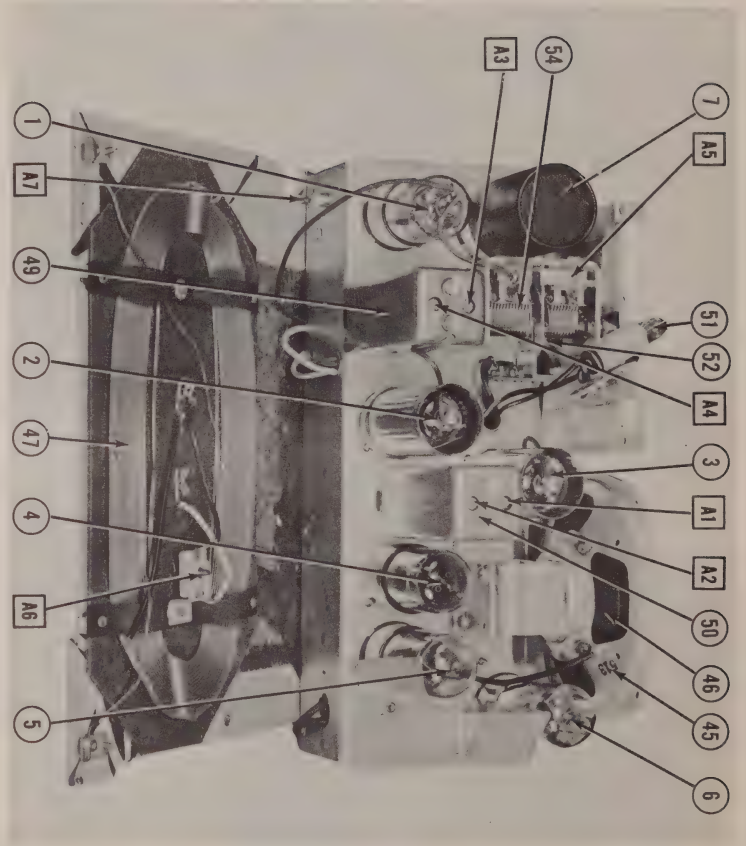
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DELCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	1 Meg.	1	1216945	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M24	45	SW-A4	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DELCO PART No.	IRC PART No.	IDENTIFICATION CODES
23	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. Oscillator Grid
24	47KΩ	½	1214553	BTS-47K	Yl.-Vi.- Or. Converter Screen Dropping
25	3.9 Meg.	½	1214565	BTS-3.9 Meg.	Or.-White-Grn. IF Grid
26	3.9 Meg.	½	1214565	BTS-3.9 Meg.	Or.-White-Grn. AF Grid
27	1 Meg.	½	1213282	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
28	3.9 Meg.	½	1214565	BTS-3.9 Meg.	Or.-White-Grn. Output Grid
29	470Ω	½	1213486	BTS-470	Yl.-Vi.-Br. Filament String
30	330Ω	½	1213224	BW-½-330	Or.-Or.-Br. Filament String
31	47Ω	1	1215570	BW-1-47	Yl.-Vi.-Blk. Rectifier Ballast
32	47Ω	1	1215570	BW-1-47	Yl.-Vi.-Blk. Rectifier Ballast
33	330Ω	10	1216958	ABA-330	Line Dropping-See Note 1
34	1000Ω	1	1211037	BTA-1000	Br.-Blk.-Red Filter
35	2000Ω	10	1216960	AB-2000	Filament String
36	330Ω	½	1213224	BW-½-330	Or.-Or.-Br. Battery Charge Network
37	22Ω	½	1214537	BW-½-22	Red-Red-Br. " " "
38	150Ω	1	1211005	BW-1-150	Br.-Grn.-Br. " " "
39	1500Ω	10	1216959	AB-1500	" " "
40	4700Ω	1	1216126	BTA-4700	Yl.-Vi.-Red " " "
41	15KΩ	½	1213257	BTS-15K	Br.-Grn.-Or. " " "
42	3.9 Meg.	½	1214565	BTS-3.9 Meg.	Or.-White-Grn. Charge Indicator Network
43	3.9 Meg.	½	1214565	BTS-3.9 Meg.	Or.-White-Grn. AVC Network

Note 1 - On IRC replacement set slider @ 330Ω from one end.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DELCO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
44	5500Ω	3.3Ω	370Ω	.4Ω	1217582	A-3877*	T22S46*		*Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DELCO PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-105†		†Fabricate new mounting bracket.
45A	PM	3.3Ω	1217017	Mod. P5-X		
B			1217411			Alternate Speaker
	CONE DIA.	VC DIA.				
46	4½"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

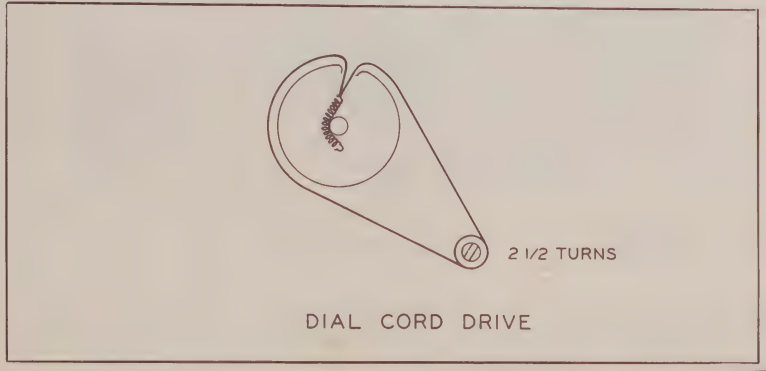
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	DELCO PART No.	MEISSNER PART No.
47	Loop Ant.	.1Ω	1.5Ω	1217569	
48	Osc. Coil	2Ω	5.5Ω	1217019	
49	Input IF	18.5Ω	18.5Ω	1216952	16-6658
50	Output IF	25Ω		1216953	16-6670

DIAL LIGHT

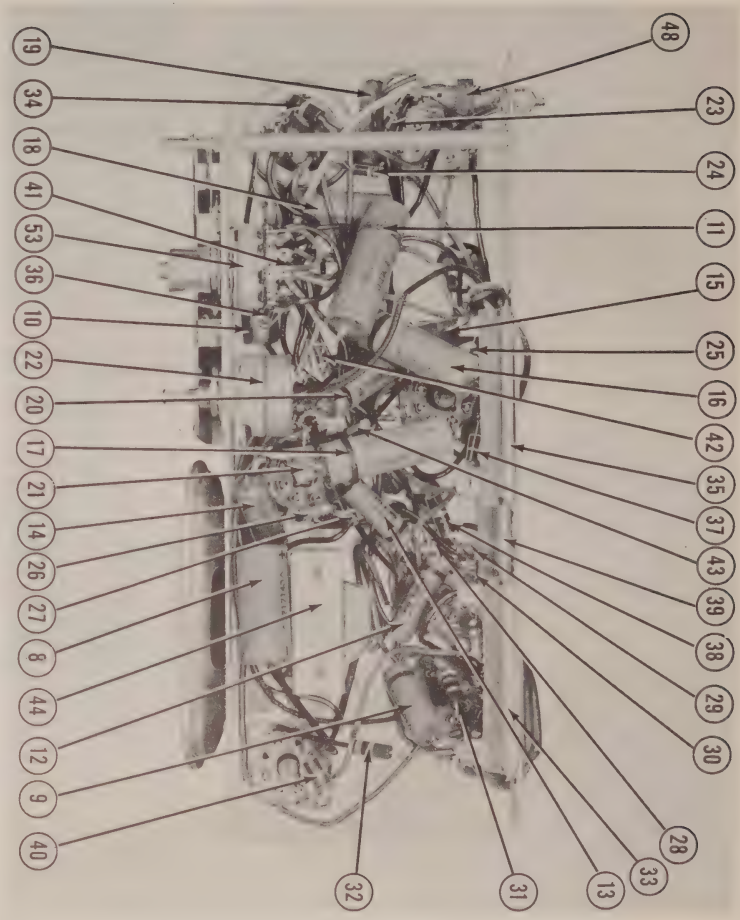
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					DELCO PART No.		
51	Bayonet	6-8	0.15	Brown	47		Type 47

MISCELLANEOUS

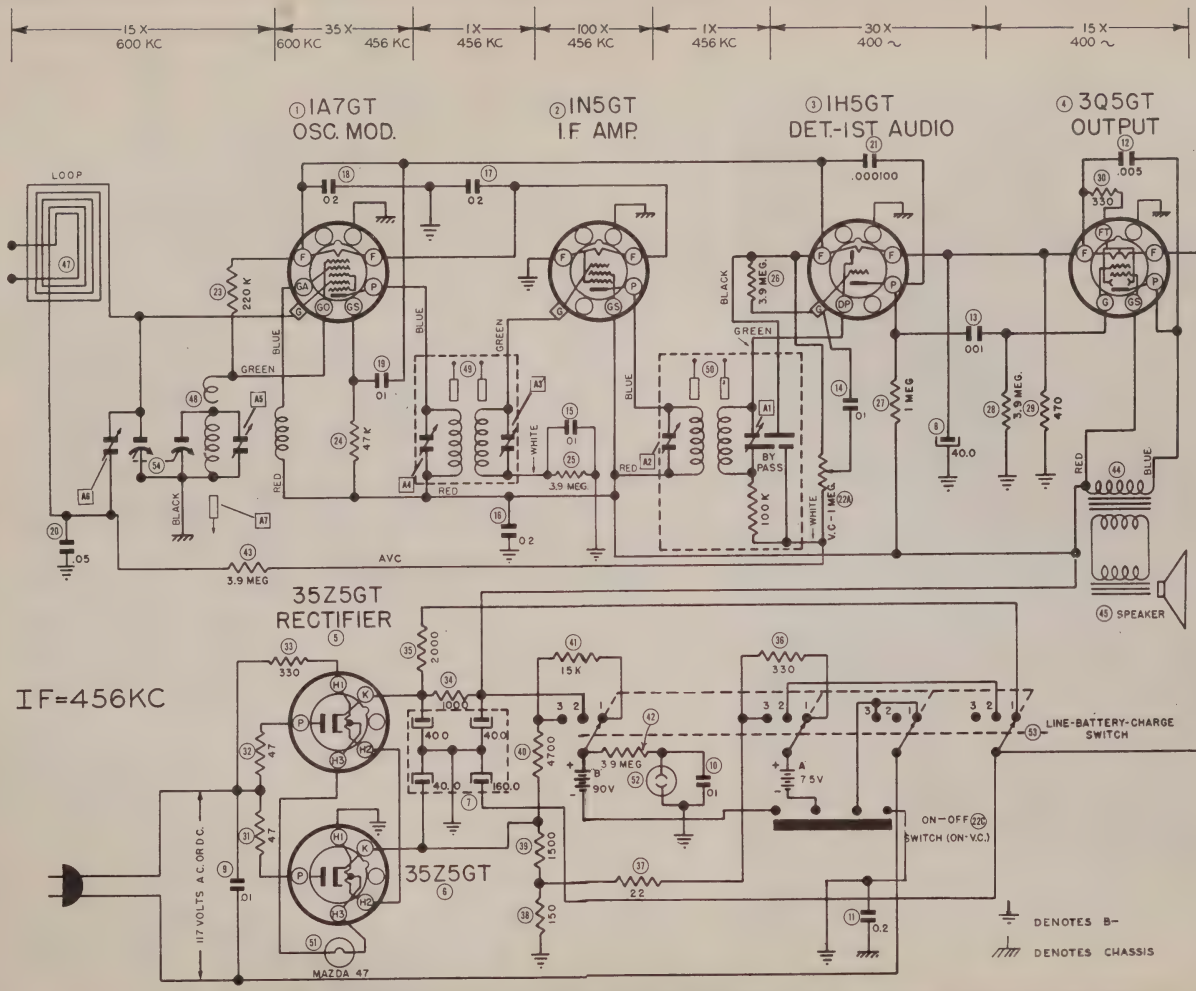
ITEM No.	PART NAME	DELCO PART No.	NOTES
52	Neon Lamp.	1217239	Charging Indicator
53	Change-Over Sw.	1216956	Power Transfer Switch
54	2 Gang Var. Cap	1216904	(13-423MMF, 24-188 MMF)
	Battery Pack	8760	7½ Volt "A" & 90 Volt "B"
	Dial Pointer	1217255	



CHASSIS—BOTTOM VIEW



DELCO MODELS R-1408, R-1409



Pin	1A7GT		1N5GT	
No.	Volt.	Res	Volt	Res
1	0V.	INF.	0V.	INF.
2	46 V.DC	*	46 V.DC	*
3	100V.DC	2.8 K.Ω.	100V.DC	2.8 K.Ω.
4	57 V.DC	43 K.Ω.	100 V.DC	2.6 K.Ω.
5	55 V.DC	230 K.Ω.	.1 V.DC	4 MEG.
6	100 V.DC	2.6 K.Ω.	0V.	3.5 MEG.
7	3 V.DC	*	0V.	*
8	0V.	INF.	10 V.DC	150 Ω.
Cap.	.1 V.DC	4 MEG.	0V.	3.5 MEG.

Pin	1H5GT		3Q5GT	
No.	Volt	Res	Volt	Res
1	0V.	INF.	0V.	INF.
2	4.5 V.DC	*.	7.2 V.DC	*
3	57 V.DC	1 MEG.	97 V.DC	3 K.Ω.
4	67 V.DC	3.7 MEG.	100 V.DC	2.6 K.Ω.
5	1.5 V.DC	1.1 MEG.	0V.	3.5 MEG.
6	0V.	0 Ω.	0V.	0 Ω.
7	3 V.DC.	*	4.5 V.DC	*
8	.2 V.DC	3.5 MEG.	5.8 V.DC	*
Cap.	.2 V.DC	3.5 MEG.		

Pin	35Z5GT		35Z5GT	
No.	Volt.	Res	Volt.	Res.
1	0V.	INF.	0V.	INF.
2	30 V.AC	29 Ω.	30 V.AC	29 Ω.
3	32 V.AC	28 Ω.	28.5 V.AC	25 Ω.
4	0V.	0 Ω.	0V.	INF.
5	113 V.AC	400 Ω.	113 V.AC	400 Ω.
6	0V.	INF.	115 V.DC	6 K.Ω.
7	61 V.AC	51 Ω.	0V.	0 Ω.
8	112 V.DC	1800 Ω.	117 V.DC	1600 Ω.

NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN AC-DC POSITION.
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

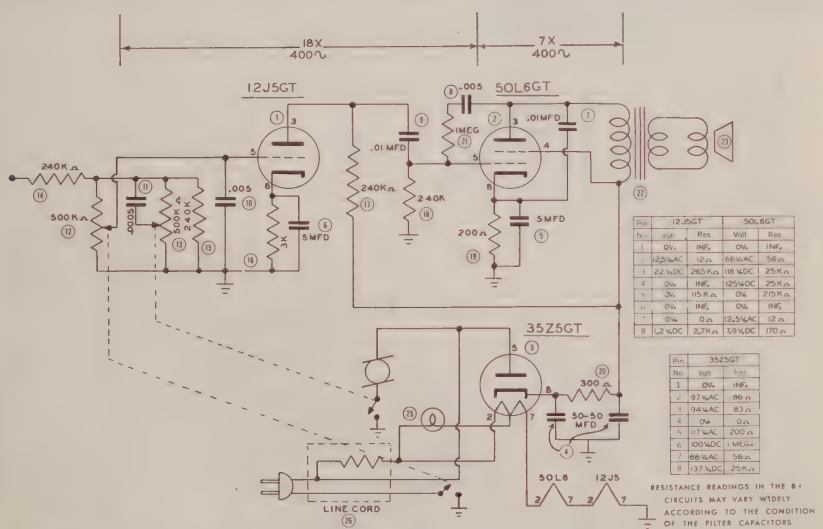
475-7

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by shorting AVC to low end of volume control.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DYNAVOX MODEL M-510

TRADE NAME	Dynavox, Model M-510
MANUFACTURER	Dynavox Corp., 40-35 21st St., Long Island City, N.Y.
TYPE SET	AC Operated Portable Phonograph with 3 Tube Amplifier and Speaker
TUBES (THREE)	Types, 12J5GT AF Amp., 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .235 Amp. @ 117 Volts AC



Pin No.	12J5GT Volt	12J5GT Res.	50L6GT Volt	50L6GT Res.
1	0V.	INF.	0V.	INF.
2	12.5VAC	12Ω	68VAC	56Ω
3	22VDC	265KΩ	118VDC	25KΩ
4	0V.	INF.	125VDC	25KΩ
5	3V.	115KΩ	0V.	215KΩ
6	0V.	INF.	0V.	INF.
7	0V.	0Ω	12.5VAC	12Ω
8	12VDC	2.7KΩ	239VDC	170Ω

Pin No.	35Z5GT Volt	35Z5GT Res.
1	0V.	INF.
2	97VAC	86Ω
3	94VAC	83Ω
4	0V.	0Ω
5	117VAC	200Ω
6	100VDC	1 MEG+
7	68VAC	56Ω
8	137VDC	25KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 475-8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS (Continued)

TUBES

ITEM No.	USE	REPLACEMENT DATA: DYNAVOX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	12J5GT	12J5GT	6Q	
2	Power Output	50L6GT	50L6GT	7AC	
3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DYNAVOX PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	50	150		TA-550	PRSA150-40-40	EZ5515	2N521	DSB2x50-150	Filter - Red
B	50	150							" - "
5	5	35		TA-35	PRS50-10	BR550	TC32	M-10-50	Cath. Bypass
6	5	35		TA-55	PRS50-10	BR550	TC32	M-10-50	" "
7	.01	400		TC-11	484-01	DT401	TP421	S-4-01	Output Plate Bypass
8	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	Feedback
9	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
10	.005	400		TC-25	484-005	DT6D5	TP408	S-6-005	Tone Compensation
11	500	500		1FM-35	1468-0005	5W5T5	MC245	MO.5-35	" "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DYNAVOX PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
12A	500KΩ	1		MR4d	D13-133	M-60-Z	Volume Control Line Switch
B	Shaft			Not Req.	A	Not Req.	Attach to 12A per instructions
C	Switch			M26	41	SW-A	" " " " "
13A	500KΩ	1		MR50	D11-133	M-58-S	Tone Control Motor Switch
B	Shaft			Not Req.	A	Not Req.	Attach to 13A per instructions
C	Switch			M26	41	SW-8	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DYNAVOX PART No.	IRC PART No.	IDENTIFICATION CODES
14	240KΩ	½		BTS-220K	Red-Yl.-Vi. Series Phono.
15	240KΩ	½		BTS-220K	Red-Yl.-Yl. Phono Shunt
16	3000Ω	½		BTS-3300	Or.-Blk.-Red AF Cathode
17	240KΩ	½		BTS-220K	Red-Yl.-Yl. AF Plate Load
18	240KΩ	½		BTS-220K	Red-Yl.-Yl. Output Grid
19	200Ω	½		BW-½-180	Red-Blk.-Br. Output Cathode
20	300Ω	1		BW-1-330	Or.-Blk.-Br. Filter
21	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Feedback

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DYNAVOX PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
22	1700Ω	3.3Ω	170Ω	.65Ω		A-3876	T22S45		

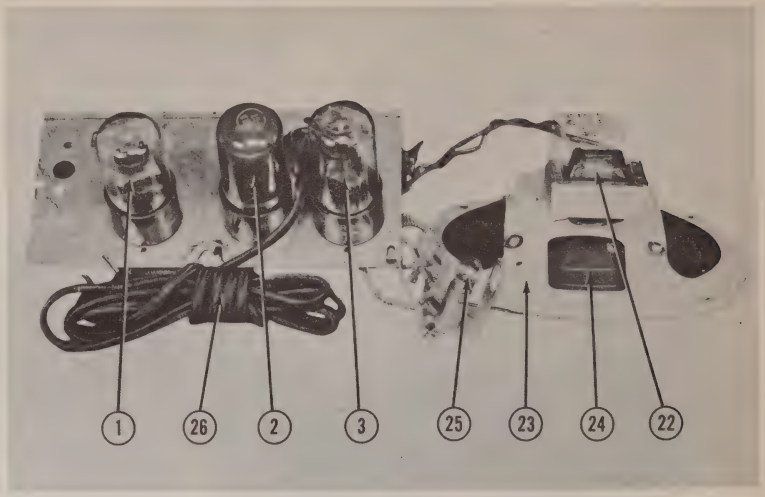
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: DYNAVOX PART No.	JENSEN PART No.		INSTALLATION NOTES
23	FIELD	VC IMP.		ST-108		
	PM	3.2Ω		Mod. P6-X		
24	CONE DIA.	VC DIA.	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		
	6"	1/2"				

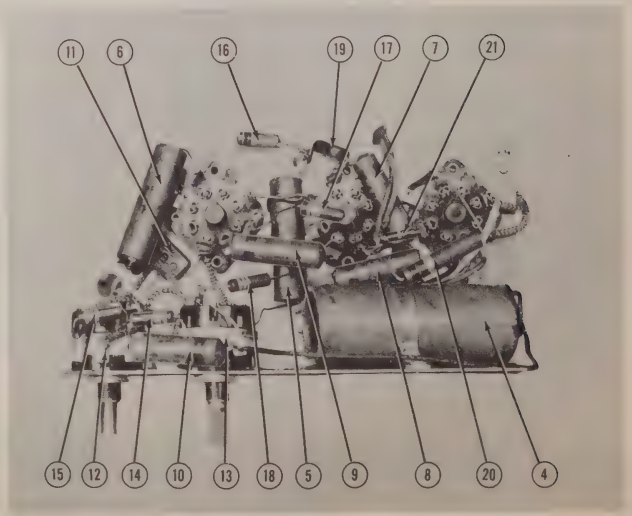
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: DYNAVOX PART No.		INSTALLATION NOTES
25	Bayonet	6-8	0.20	White			Type 51

CHASSIS—BOTTOM VIEW



CHASSIS—BOTTOM VIEW



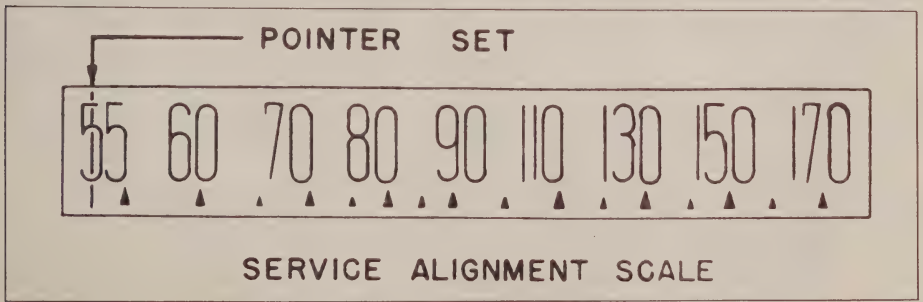
ECA MODEL 201

TRADE NAME	ECA, Model 201
MANUFACTURER	Electronic Corp. of America, 170 53rd St., Brooklyn 32, N.Y.
TYPE SET	AC-DC Operated Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1725KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn variable fully closed and set pointer 1-5/8" from left end of dial back plate. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD.	High side to ext. ant. lead. Low side to chassis.	1500KC	5-11/16" from left end of dial back plate.	"	A5	Adjust for maximum output.
200MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "



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PARTS LIST AND DESCRIPTIONS

ECA MODEL 201

TUBES

ITEM No.	USE	REPLACEMENT DATA: ECA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7CC	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ECA PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	50	150	S-1046-1	TA-530	PRSA150-50-30	BRD3515	2N520	M-5030-150	Filter - Red
B	30	150							" - Blue
7	.05	400	CP-105E	TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.02	400	CP-104E	TC-12	484-02	DT4S2	TP423	S-4-02	Output Plate Bypass
9	.02	400	CP-104E	TC-12	484-02	DT4S2	TP423	S-4-02	Audio Coupling *
10	.005	600	CP-116H	TC-25	684-005	DT6D5	TP403	S-6-005	" "
11	.02	400	S400D-15-4	TC-12	484-02	DT4S2	TP423	S-4-02	AVC Filter
12	.02	400	S400D-15-4	TC-12	484-02	DT4S2	TP423	S-4-02	" "
13	.1	400	CP-110E	TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
14	.002	600	CP-122H	TC-22	684-002	DT6D2	TP405	S-6-002	Ant. Isolation
15	250	500	CM-112E	1FM-325	1468-00025	5W5T25	MC240	M0.8-325	Audio Plate Bypass
16	100	500	CM-103E	1FM-31	1468-0001	5W5T1	MC235	M0.8-31	Diode Filter
17	100	500	CM-103E	1FM-31	1468-0001	5W5T1	MC235	M0.8-31	" "
18	100	500	CM-103E	1FM-31	1468-0001	5W5T1	MC235	M0.8-31	Osc. Grid Capacitor

*May be .005 MFD. in some models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ECA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	500KΩ	1	S-1016-3	MR48	D18-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " " "

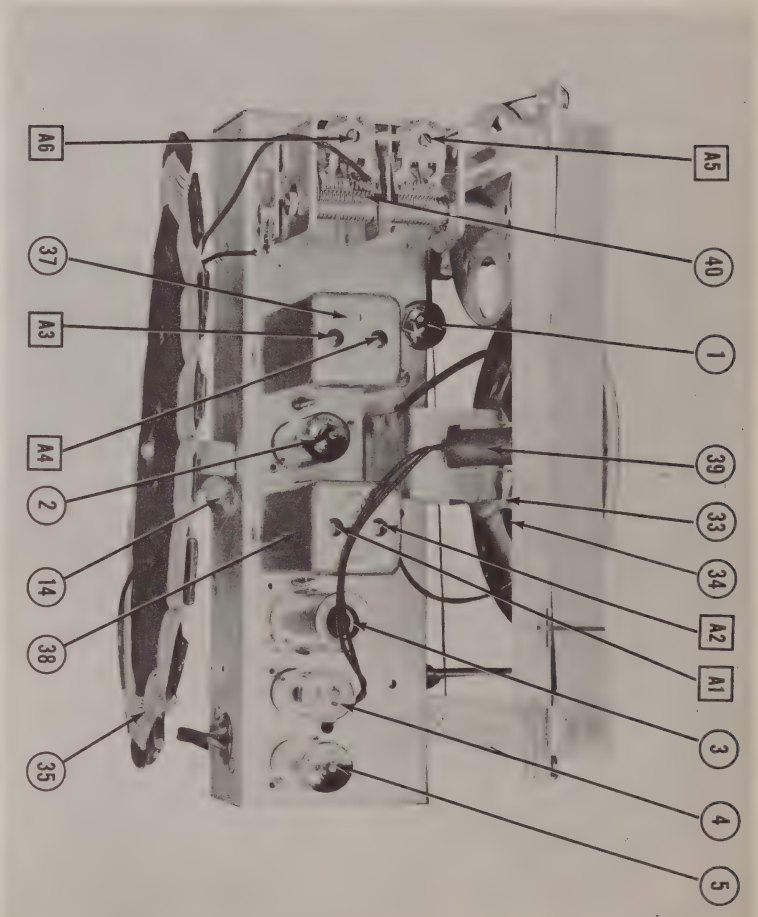
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ECA PART No.	IRC PART No.	IDENTIFICATION CODES
20	10 Meg.	½	RS-169B	BTS-10 Meg.	Br.-Blk.-Blue AVC Network
21	47KΩ	½	RS-186B	BTS-47K	Yl.-Vi.-Or. Oscillator Grid
22	33Ω	½	RS-220B	BW-½-33	Or.-Or.-Blk. Parasitic Suppressor
23	220KΩ	½	RS-190B	BTS-220K	Red-Red-Yl. Line Isolating
24	100KΩ	½	S450-97-20	BTS-100K	Br.-Blk.-Yl. AVC Network
25	2.2 Meg.	½	RS-223B	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
26	47KΩ	½	RS-186B	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
27	10 Meg.	½	RS-169B	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
28	470KΩ	½	RS-189B	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
29	470KΩ	½	RS-189B	BTS-470K	Yl.-Vi.-Yl. Output Grid
30	150Ω	2	RS-135CA	BW-2-150	Br.-Grn.-Br. Output Cathode
31	1500Ω	2	RS-195EA	BT-2-1500	Br.-Grn.-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: ECA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
32	2000Ω	3.2Ω	110Ω tapped @ 5Ω	.4Ω	S-1021	A-3876‡			‡ Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ECA PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107		
33	PM	3.2Ω	S-QL-104	Mod. P5-V		
	CONE DIA.	VC DIA.				
34	4-5/8"	9/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

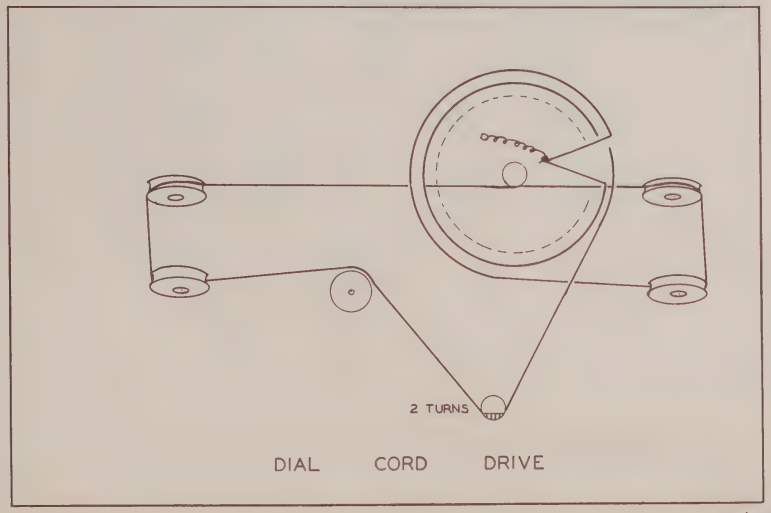
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ECA PART No.	MEISSNER PART No.
35	Loop Ant.	.1Ω	1.2Ω	C-1030-1	
36	Osc. Coil	.3Ω	3Ω	B-1027	14-1040
37	Input IF	12Ω	12.5Ω	B-1038-1	16-6658
38	Output IF	6.5Ω	12.5Ω	B-1061-1	16-6660

DIAL LIGHT

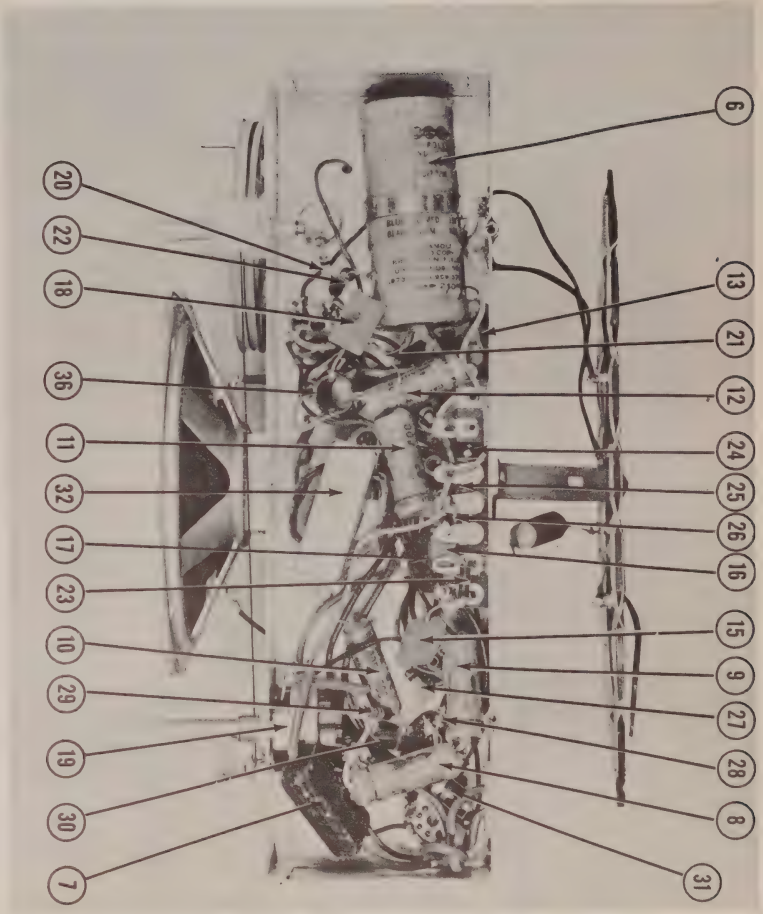
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ECA PART No.		INSTALLATION NOTES
39	Bayonet	6-8	0.15	Brown	1P-214		Type 47

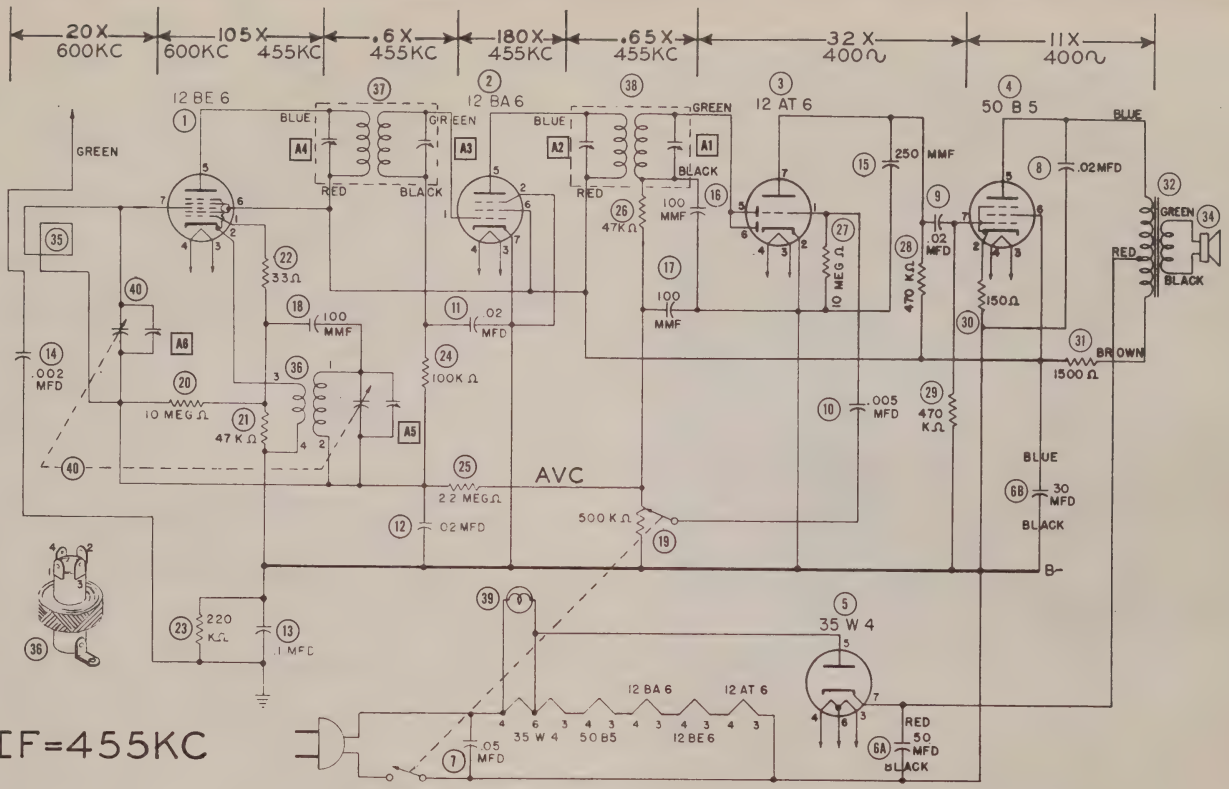
MISCELLANEOUS

ITEM No.	PART NAME	ECA PART No.	NOTES
40	2 Gang Var. Cap	S-CV110M	(23-460MMF, 34-201MMF)



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-2.2V.DC	0V.	12V.AC	22V.AC	90V.DC	90V.DC	-8V.DC
2	12BA6	0V.	0V.	22V.AC	35V.AC	90V.DC	90V.DC	0V.
3	12AT6	-1V.DC	0V.	0V.	12V.AC	-8V.DC	-8V.DC	34 V.DC
4	50B5	0V.	6.5V.DC	35V.AC	82V.AC	118V.DC	90V.DC	0V.
5	35W4	125 V.DC	0V.	82V.AC	117 V.AC	113V.AC	113V.AC	125V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	45 K Ω	.3 Ω	13 Ω	24 Ω	30 K Ω	30 K Ω	2.5MEG.
2	12BA6	2.7 MEG.	0 Ω	24 Ω	32 Ω	30 K Ω	30 K Ω	0 Ω
3	12AT6	10 MEG.	0 Ω	0 Ω	13 Ω	500 K Ω	500 K Ω	500 K Ω
4	50B5	410 K Ω	125 Ω	32 Ω	80 Ω	30 K Ω	30 K Ω	410 K Ω
5	35W4	30 K Ω	INF.	80 Ω	105 Ω	100 Ω	100 Ω	30 K Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-9

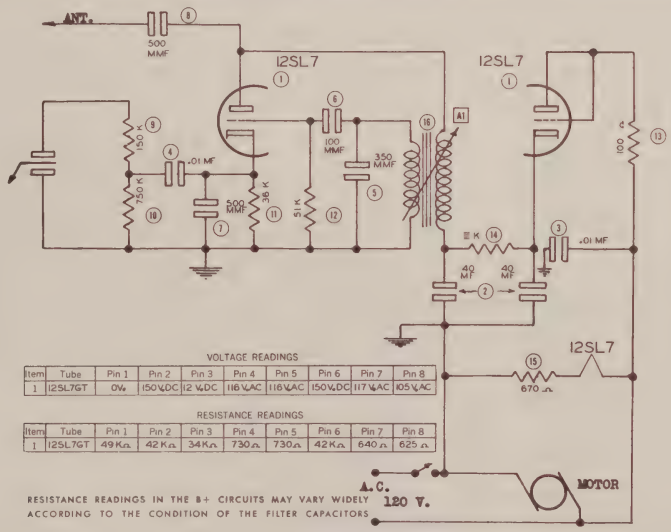
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FERRAR
MODEL WR-11

FERRAR MODEL WR-11

TRADE NAME	Ferrar, Model WR-11
MANUFACTURER	A. E. Ferrar, 55 W. 26th St., New York, N.Y.
TYPE SET	Wireless Remote Record Player with Automatic Changer
TUBES (ONE)	Type, 12SL7GT Oscillator-Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .120 Amp. @ 117 Volts AC



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SL7GT	0V.	150 V.DC	12 V.DC	116 V.AC	116 V.AC	150 V.DC	117 V.AC	105 V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SL7GT	49 KΩ	42 KΩ	34 KΩ	730 Ω	730 Ω	42 KΩ	640 Ω	625 Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 475-10

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		FERRAR PART No.	STANDARD REPLACEMENT		
1	Osc.-Rectifier	12SL7GT	12SL7GT	8BD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	FERRAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	
2A	40	150		TA-440	PRSA150-40-40	BRD4415	2N511	M-2x40-150	Filter
B	40	150							"
3	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Line Filter
4	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Phono Coupling
5	350	500		1FM-335	1468-00035	5W5T3	MC240	MO.5-33	Fixed Trimmer
6	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Osc. Grid Capacitor
7	500	500		1FM-35	1468-0005	5W5T5	MC245	MO.5-35	Cath. Bypass
8	500	500		1FM-35	1468-0005	5W5T5	MC245	MO.5-35	Ant. Coupling

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	FERRAR PART No.	IRC PART No.	
9	150KΩ	1		BTA-150K	Br.-Grn.-Yl. Series Phono
10	750KΩ	½		BTS-680K	Vi.-Grn.-Yl. Phono Shunt
11	36KΩ	½		BTS-33K	Or.-Blue-Or. Oscillator Cathode
12	51KΩ	½		BTS-47K	Grn.-Br.-Or. Oscillator Grid
13	100Ω	1		BW-1-100	Br.-Blk.-Br. Rectifier Ballast
14	2000Ω	½		BTS-2200	Red-Blk.-Red Filter
15	670Ω	20		DHA-750	Line Dropping-See Note 1

Note 1 - On IRC replacement set slider @ 670Ω from one end.

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	FERRAR PART No.	MEISSNER PART No.	
16	Osc. Coil	12.5Ω	10Ω	42-3		

DISASSEMBLY INSTRUCTIONS

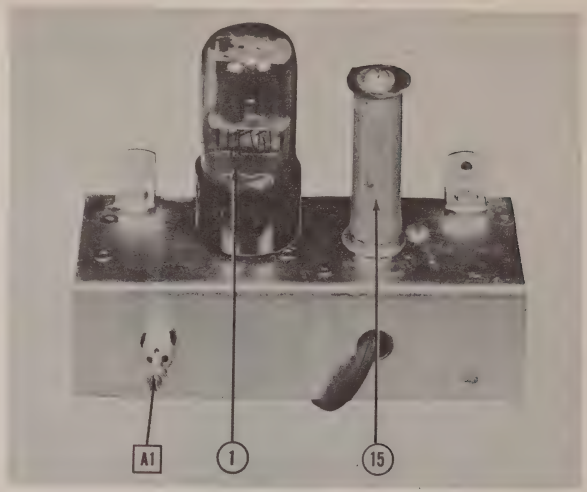
1. Remove turntable.
2. Remove two screws and washers holding record player mounting plate. Remove complete top.
3. Unsolder phono motor leads.
4. Unsolder phono motor switch lead.
5. Remove tape and clamps holding leads.
6. Remove two bolts holding chassis. Remove chassis.
7. Unsolder phono pickup leads from chassis.

REMOTE RECORD PLAYER ALIGNMENT

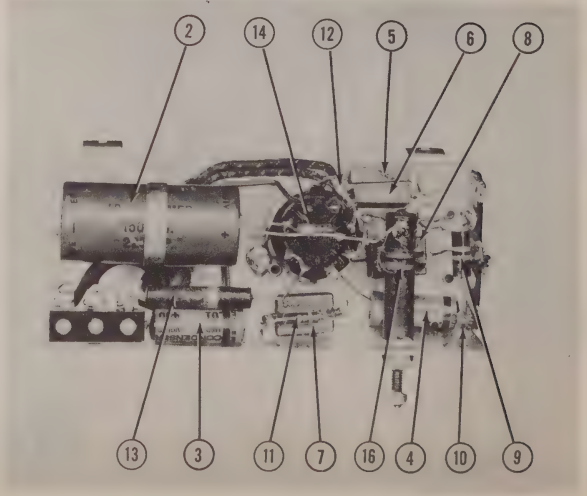
Place a record on turntable and turn on-off switch to on position. Allow 5 minutes for osc. to warm up.

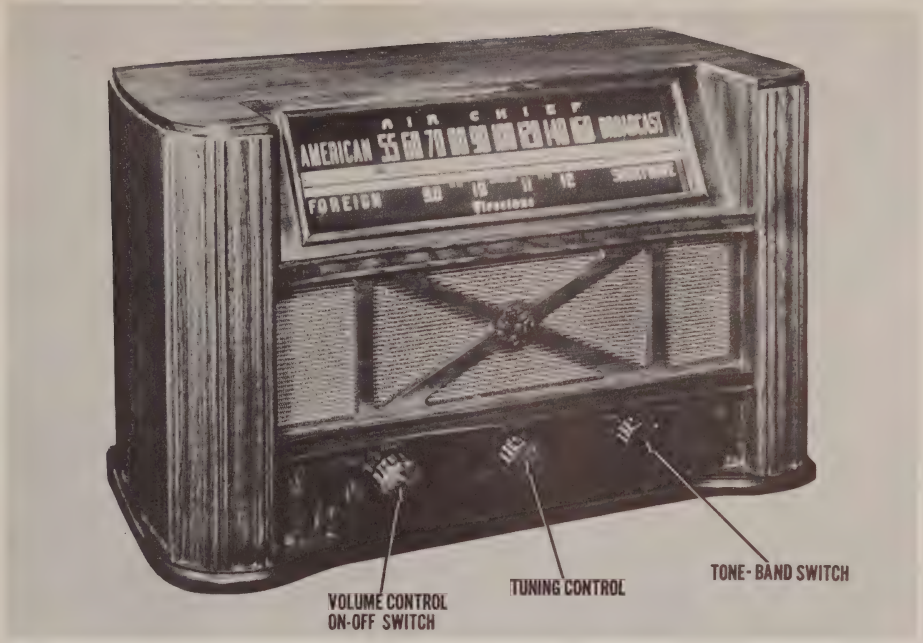
Place tone arm on record and tune your receiver to approximately 600KC. If there is any station interfering with record player signal adjust A1 to shift the signal to a non-interfering point and retune receiver to player frequency.

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW





AIRCHIEF MODEL 4-A-20

TRADE NAME	Airchief Model 4-A-20 (Code #5-5-9000-A)
SUPPLIER	The Firestone Tire & Rubber Co., 1200 Firestone Pkwy. Akron, Ohio
TYPE SET	AC-DC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 RF Amp., 12SA7 1st Det.-Osc., 12SF7 IF-2nd Det.-AVC, 12SK7 1st AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC — RATING .240 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1650KC — SHORT WAVE 9.0-12.0MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer at 1st reference mark at left end of dial back plate. Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Set volume control at maximum volume and keep input from signal generator no higher than is necessary to obtain output reading. Care should be taken that the SW oscillator is aligned on the correct peak. To check, tune approximately 910KC below incoming signal. If image is not heard at this point turn to 12MC reference mark and open A8 to next peak. Then readjust A9 and recheck for image. Use insulated alignment screwdriver for adjustment.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
200 MMF	High side to pin #8 (Control grid) of 12SA7. Low side to B-.	455KC	BC	Any non-interfering point.	Across voice coil	A1,A2 A3,A4.	Adjust for maximum output
200 MMF	High side to ext. ant. clip. Low side to chassis.	1500KC	"	1500KC reference mark (1st line at right)	"	A5	" " " "
200 MMF	"	"	"	Tune for maximum output.	"	A6,A7	" " " "
400Ω	"	12.0MC	SW	12MC reference mark (2nd mark from right)	"	A8	" " " "
400Ω	"	"	"	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

FIRESTONE (AIR CHIEF)
MODEL 4-A-20 (Code #5-5-9000-A)

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIR CHIEF PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	1st Det.-Osc.	12SA7	12SA7	8R	
3	IF-2nd Det.-AVC	12SF7	12SF7	7AZ	
4	1st AF	12SK7	12SK7	8N	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR CHIEF PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	500256	EL-24	AF84D4A+	UP4CJ59+	FP306+	DY-4020-150	■ Filter
B	20	150							▲ "
8	.05	400	502157	TC-15	484-05	DT4S5	TP426	S-4-05	Rect. Bypass
9	.02	400	502152	TC-12	484-02	DT4S2	TP423	S-4-02	Feedback
10	.01	400	502151	TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
11	.004	400	502156	TC-24	484-004	DT6D4	TP407	S-6-006	Audio Coupling
12	.05	200	502153	TC-15	484-05	DT4S5	TP426	S-4-05	Audio Plate Decoup.
13	.002	400	502453	TC-22	484-002	DT6D2	TP405	S-6-002	Audio Coupling
14	.0008	400	502470	MS-38	1479-0008	1W5T8	MC251	M0.3-38	IF Bypass Vol. Cont.
15	.25	200	502262	TC-2	484-.25	DT4P25	TP430	S-4-25	Conv. Screen Bypass
16	.2	400	502158	TC-2	484-.2	DT4P2	TP429	S-4-2	Line Isolation
17	.1	200	502155	TC-1	484-.1	DT4P1	TP428	S-4-1	AVC Filter
18	10								Fixed Trimmer ‡
19	110	500	502160	1FM-31	1468-0001	5W5T1	MC235	M0.5-31	Audio Plate Bypass
20	110	500	502160	1FM-31	1468-0001	5W5T1	MC235	M0.5-31	IF Bypass Diode
21	50	500	502159	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	Osc. Grid Capacitor
22	315	500	502162						Fixed Padder Sw

+ Do not use bypass section.

‡ Not used in all models.

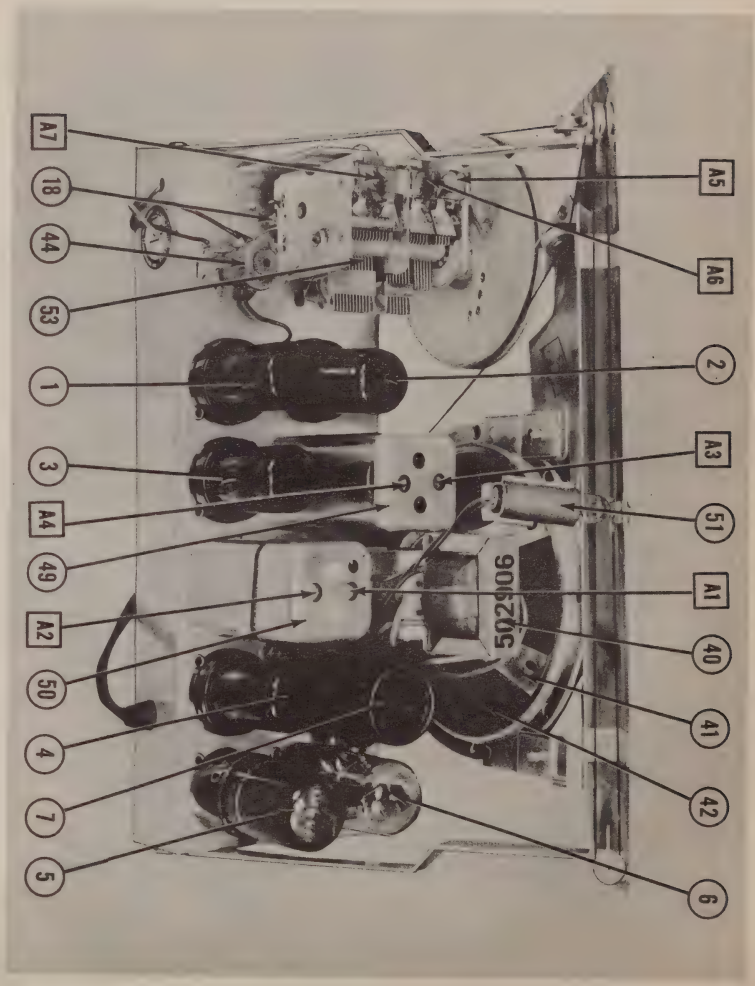
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	500KΩ	1	502145	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	IRC PART No.	IDENTIFICATION CODES
24	390Ω	½	502140	BW-½-390	Or.-White-Br. RF Cathode
25	22KΩ	½	502130	BTS-22K	Red-Red-Or. Oscillator Grid
26	220KΩ	½	502133	BTS-220K	Red-Red-Yl. Line Isolation
27	4700Ω	½	502991	BTS-4700	Yl.-Vi.-Red Mixer Screen Dropping
28	3.3 Meg.	½	502289	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
29	47Ω	½	502264	BW-½-47	Yl.-Vi.-Blk. IF Cathode
30	47KΩ	½	502131	BTS-47K	Yl.-Vi.-Or. Diode Filter
31	10 Meg.	½	502136	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
32	2200Ω	½	502128	BTS-2200	Red-Red-Red " " Cathode
33	2.2 Meg.	½	502135	BTS-2.2 Meg.	Red-Red-Grn. " " Screen Dropping
34	220KΩ	½	502133	BTS-220K	Red-Red-Yl. " " Plate Load
35	220KΩ	½	502133	BTS-220K	Red-Red-Yl. " " " Decoupling
36	470KΩ	½	502134	BTS-470K	Yl.-Vi.-Yl. Output Grid
37	130Ω	½	502138	BW-½-150	Br.-Or.-Br. " Cathode
38	1500Ω	1	502469	BTA-1500	Br.-Grn.-Red Filter
39	33Ω	½	502574	BW-½-33	Or.-Or.-Blk. Rectifier Ballast.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIR CHIEF PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
40A	2300Ω	3.5Ω	225Ω tapped @ 10Ω	.75Ω	500617	A-3876*			*Bend mounting tabs down, file out slots and mount on original bracket. Add extra filter to reduce hum level.
B					502906				Alternate transformer used with A-500616 speaker.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	AIR CHIEF PART No.	JENSEN PART No.		
41A	PM	3.5Ω	R-500616	ST-1061 Mod. P5-W		†New mounting bracket must be fabricated.
B			A-500616			Alternate Speaker
	CONE DIA.	VC DIA.				
42	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	AIR CHIEF PART No.	MEISSNER PART No.	
43	Loop Ant.	0Ω	.1Ω	502196		
44	Ant. Coup. Coil	.7Ω	3Ω	502121		
45	SW Ant. Coil	.5Ω	0Ω	502740		
46	BC RF Coil	7Ω	7.5Ω	502142		
47	BC Osc. Coil	1.5Ω	1Ω	502198		
48	SW Osc. Coil	.1Ω	.1Ω	502197		
49	Input IF	20Ω	20Ω	502102	16-6658	
50	Output IF	19Ω	19Ω	502103	16-6660	

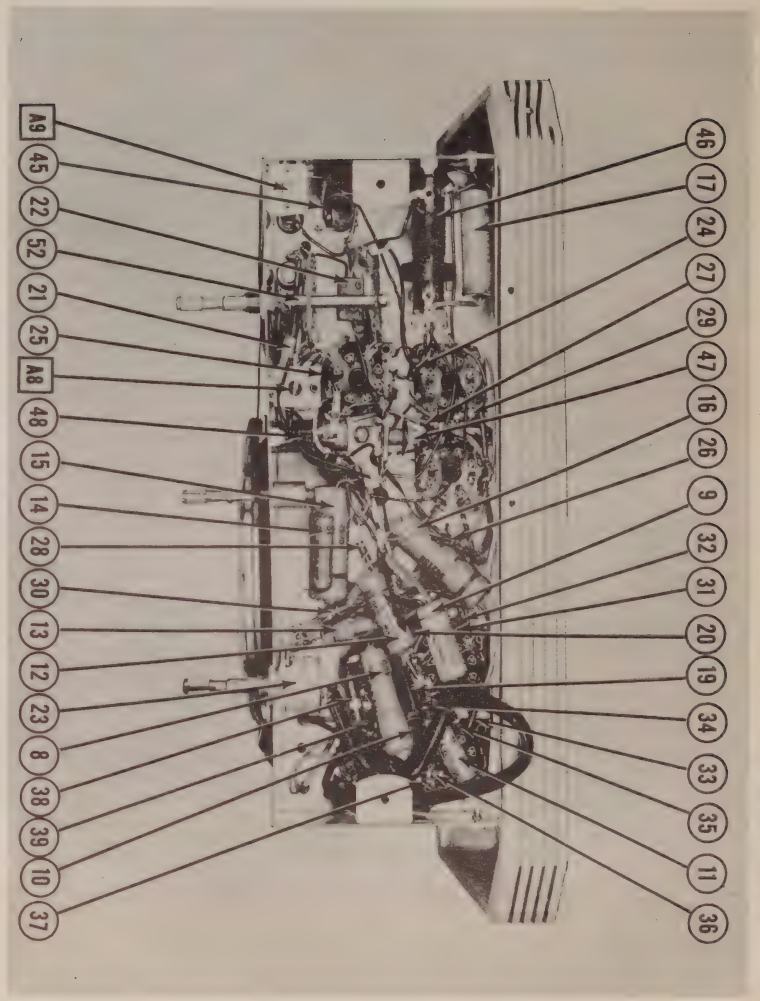
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIR CHIEF PART No.		
51	Bayonet	6-8	0.15	brown	502473		Type 47

MISCELLANEOUS

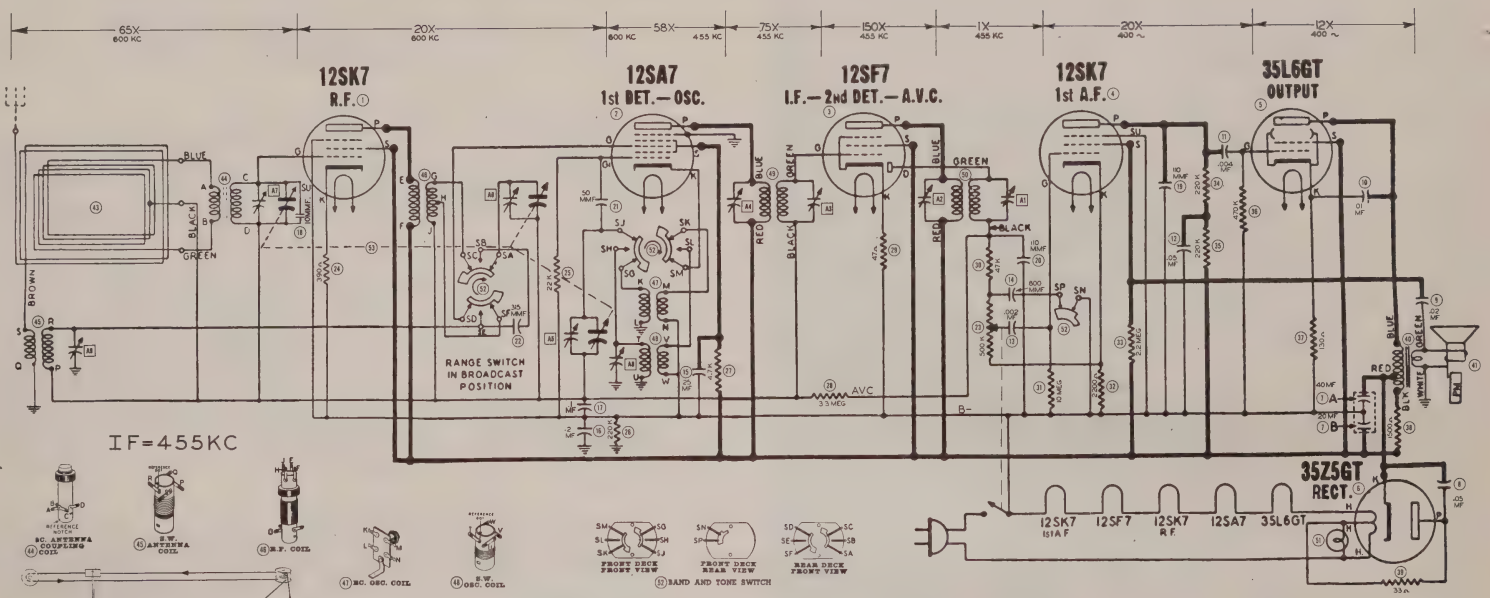
ITEM No.	PART NAME	AIR CHIEF PART No.	NOTES
52	Switch	502199	Band and Tone
53	3 Gang Var. Cap	502123	28-465 MMF, 18-256 MMF, 11-103MMF
A8	Trimmer Cap.	502172	SW Osc. Adj. 25-100 MMFD.
A9	" "	502172	SW Ant. Adj. 25-100 MMFD
	Dial Scale	502220	Glass
	Knob	501778	Volume or Tuning
	"	501779	Tone & Band Switch

CHASSIS—BOTTOM VIEW



FIRESTONE (AIR CHIEF)
MODEL 4-A-20 (Code #5-5-9000-A)

FIRESTONE (AIR CHIEF)
MODEL 4-A-20 (Code #5-5-9000-A)



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION.

DIAL AND POINTER DRIVE CORD ARRANGEMENT

To string dial cord, set gang condenser to fully meshed position and use following parts:

114955	Clip on end of cord
117057	Cord (57 inches)
119087	Ring for dial cord
161384	Tension Spring

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	-2V.DC	25.5VAC	0V.	-2VDC	-2.7V.DC	77VDC	36.5VAC	77VDC
2	12SA7	-2V.DC	47.5VAC	77V.DC	58VDC	-3.2V.DC	0V.	36.5VAC	-2V.DC
3	12SF7	-2V.DC	-2V.DC	.55V.DC	77VDC	-1VDC	77VDC	12.5VAC	25.5VAC
4	12SK7	-2V.DC	0V.	0V.	-2V.DC	-35V.DC	7.5V.DC	12.5VAC	23V.DC
5	35L6GT	-2V.DC	47.5VAC	112 V.DC	77V.DC	0V.	0V.	85VAC	4.2V.DC
6	35Z5GT	0V.	117 VAC	113VAC	117V.DC	112VAC	0V.	85VAC	118V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	195KΩ	22Ω	0Ω	3.7MEG.	350Ω	30KΩ	32Ω	30KΩ
2	12SA7	195KΩ	42Ω	30KΩ	35KΩ	20KΩ	1.5Ω	32Ω	3.7MEG.
3	12SF7	195KΩ	3.7MEG.	45Ω	30KΩ	430KΩ	30KΩ	1Ω	22Ω
4	12SK7	195KΩ	0Ω	0Ω	10MEG.	2.3KΩ	2.2MEG.	1Ω	470KΩ
5	35L6GT	195KΩ	42Ω	30KΩ	30KΩ	430KΩ	430KΩ	70Ω	22Ω
6	35Z5GT	INF.	97Ω	94Ω	30KΩ	122Ω	0Ω	70Ω	30KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-11

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GAROD
MODEL 5AP1-Y

GAROD
MODEL 5AP1-Y

GAROD MODEL 5AP1-Y

TRADE NAME	Garod, Model 5AP1-Y "The Companion"
MANUFACTURER	Garod Radio Corp., 70 Washington St., Brooklyn, NY.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12SK7GT IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1650KC RATING .250 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and chassis. Volume should be at maximum. Output of signal generator no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
	Loop	1650KC	"	"	A5	Connect output of signal generator to a few turns of wire and radiate signal into receiver loop. Adjust for maximum output.
	"	1500KC	Tune for maximum output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

GAROD MODEL 6AP1-Y

TUBES

ITEM No.	USE	REPLACEMENT DATA: GAROD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GAROD PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	5.400-8	TA-440	PRSA150-40-40	EZ443150C	MN511	DSB-403020-150	Filter - Red
B	40	150							" - Blue
C	20	150		UT-201	PRS150-20		TC45		" - Green
7	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Output Plate Bypass
9	.01	200		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
10	.01	200		TC-11	484-01	DT4S1	TP421	S-4-01	" "
11	.2	400		TC-2	484-.2	DT4P2	TP429	S-4-2	IF Cath. Bypass
12	.02	200		TC-12	484-02	DT4S2	TP423	S-4-02	AVC Filter
13	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Ant. Isolation
14	220	500		1FM-32	1468-0002	SW5T2	MC237	M0.5-322	Audio Plate Bypass
15	220	500		1FM-32	1468-0002	SW5T2	MC237	M0.5-322	IF Bypass Vol. Cont.
16	250	500		1FM-325	1468-00025	SW5T25	MC240	M0.5-325	Phono Coupling

†Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GAROD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17	1 Meg.	1	8.201-2				Volume Control & Switch

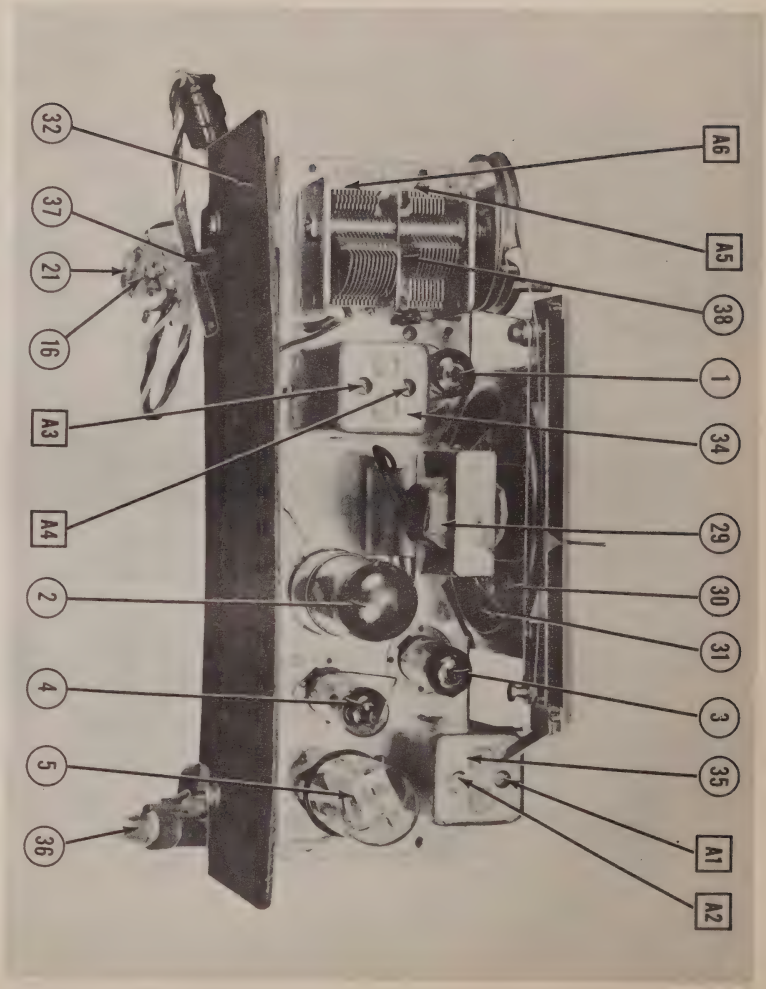
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GAROD PART No.	IRC PART No.	IDENTIFICATION CODES
18	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
19	150Ω	½		BW-½-150	Br.-Grn.-Br. IF Cathode
20	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
21	150KΩ	½		BTS-150K	Br.-Grn.-Yl. Tone Compensation
22	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AF Grid
23	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
24	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
25	150Ω	1		BW-1-150	Br.-Grn.-Br. Output Cathode
26	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
27	100Ω	1		BW-1-100	Br.-Blk.-Br. Filter
28	47Ω	½		BW-½-47	Yl.-Vi.-Blk. Parasitic Suppressor

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GAROD PART No.	STANCOR PART No.	THORDARSON PART No.		INSTALLATION NOTES
29A	1800Ω	3.2Ω	140Ω	.7Ω	Part of 30.303	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.
B					Part of 30.301				Alternate transformer.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: GAROD PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.				
30A B	PM	3.3Ω	30.303 30.301			Alternate speaker.
	CONE DIA.	VC DIA.				
31	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: GAROD PART No.	MEISSNER PART No.	
32	Loop Ant.	.2Ω	3.5Ω	1.410		
33	Osc. Coil	1Ω	6.5Ω	1.402-2	14-1040	Add 50MMFD from grid to high side tuning cap.
34	Input IF	46Ω	43Ω	1.259	16-6658	
35	Output IF	46Ω	43Ω	1.259	16-6660	

DIAL LIGHT

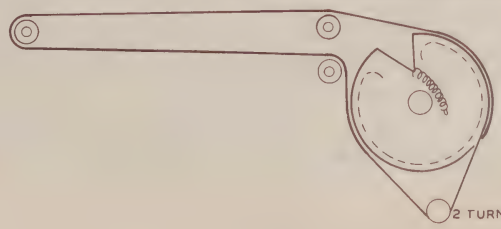
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: GAROD PART No.		INSTALLATION NOTES
36	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	GAROD PART No.	NOTES
37	Switch	11.207	Radio-Phono DPDT
38	2 Gang Var. Cap	2.200	(19-378 MMF, 18-177 MMF)
	Phono Pickup	36.104	
	Phono Motor	36.108	Includes Turntable

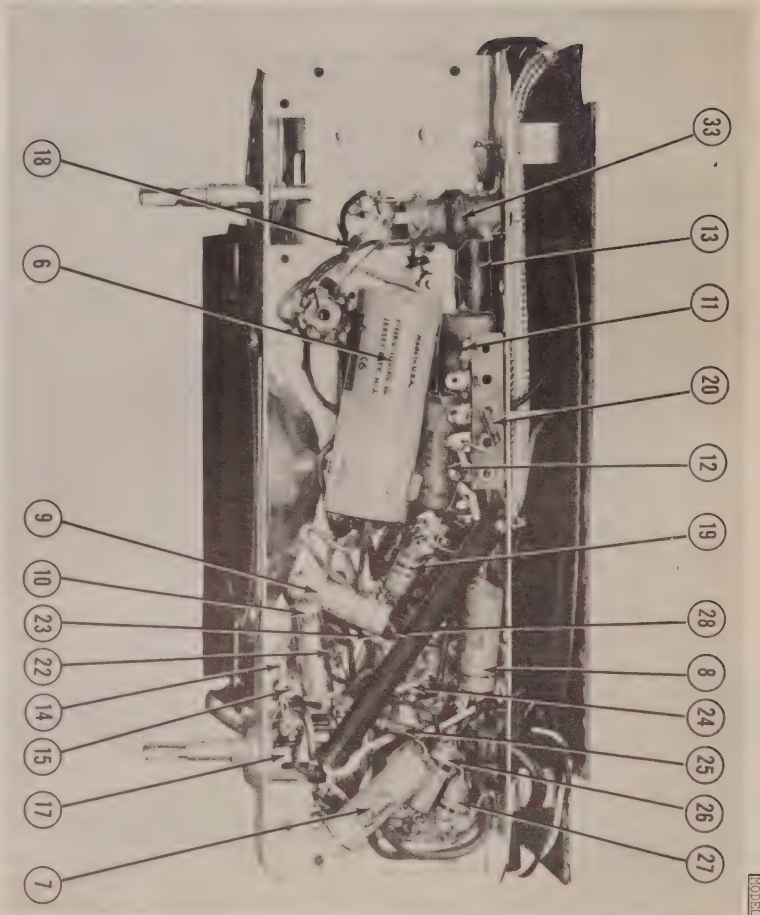
DISASSEMBLY INSTRUCTIONS

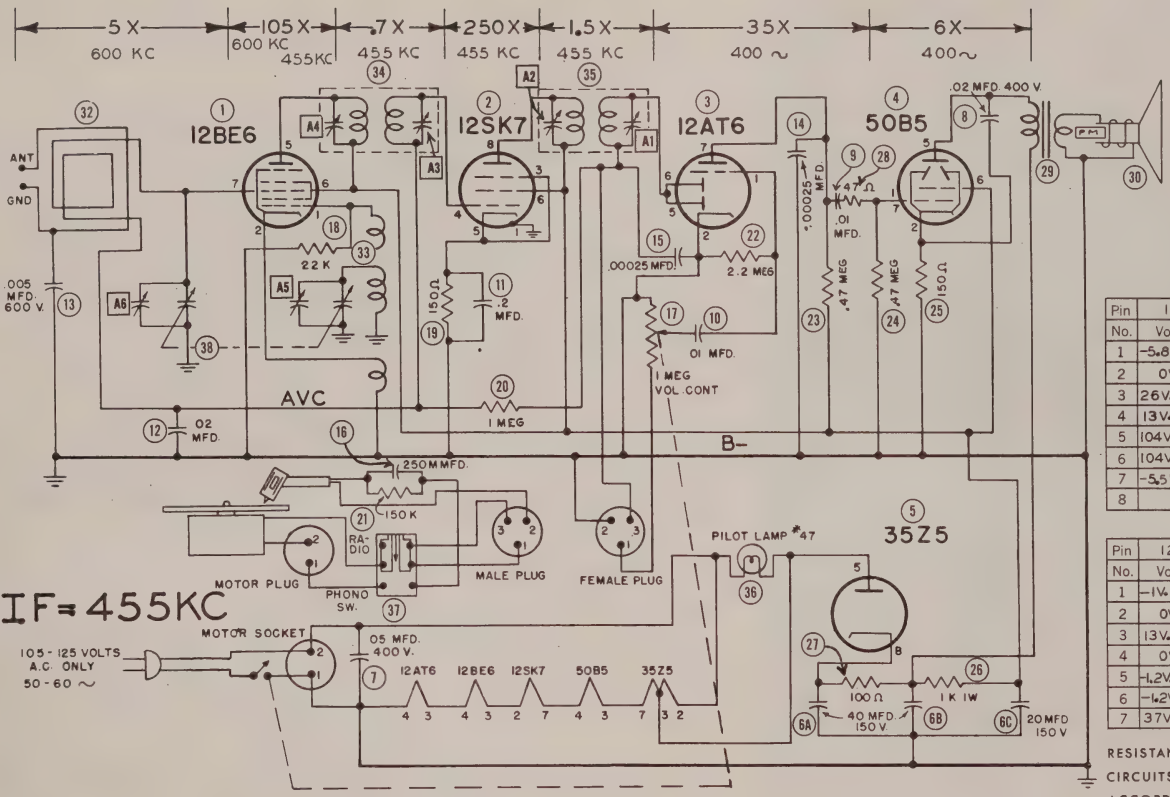
1. Remove two push-on type knobs from front of cabinet.
2. Remove two Phillips head screws holding radio-phono switch.
3. Disconnect phono-motor plug.
4. Remove one slotted head screw and three Phillips head screws from top of cabinet holding chassis. Lift cabinet over top of chassis.
5. Remove two self-tapping screws at each end of chassis holding shields. Remove shields from ends and bottom of chassis.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





Pin No.	35Z5GT Volt.	35Z5GT Res
1	104 V. DC	50 K Ω
2	117 V. AC	100 Ω
3	113 V. AC	97 Ω
4	122 V. DC	50 K Ω
5	113 V. AC	97 Ω
6	0 V.	0 Ω
7	87 V. AC	80 Ω
8	125 V. DC	50 K Ω

Pin No.	12BE6 Volt.	12BE6 Res	12SK7GT Volt	12SK7GT Res.
1	-5.8 V DC	21 K Ω	0 V.	0 Ω
2	0 V.	1 Ω	26 V. AC	26 Ω
3	26 V. AC	26 Ω	1 V. DC	155 Ω
4	13 V. AC	15 Ω	-2 V. DC	1.8 MEG.
5	104 V. DC	50 K Ω	1 V. DC	155 Ω
6	104 V. DC	50 K Ω	104 V. DC	50 K Ω
7	-5.5 V. DC	1.8 MEG.	37 V. AC	40 Ω
8			104 V. AC	50 K Ω

Pin No.	12AT6 Volt.	12AT6 Res	50B5 Volt	50B5 Res.
1	-1 V. DC	2.5 MEG.	0 V.	410 K Ω
2	0 V.	0 Ω	50 V. DC	150 Ω
3	13 V. AC	15 Ω	87 V. AC	80 Ω
4	0 V.	0 Ω	37 V. AC	40 Ω
5	-1.2 V. DC	800 K Ω	120 V. DC	50 K Ω
6	-1.2 V. DC	800 K Ω	104 V. DC	50 K Ω
7	37 V. DC	510 K Ω	0 V.	410 K Ω

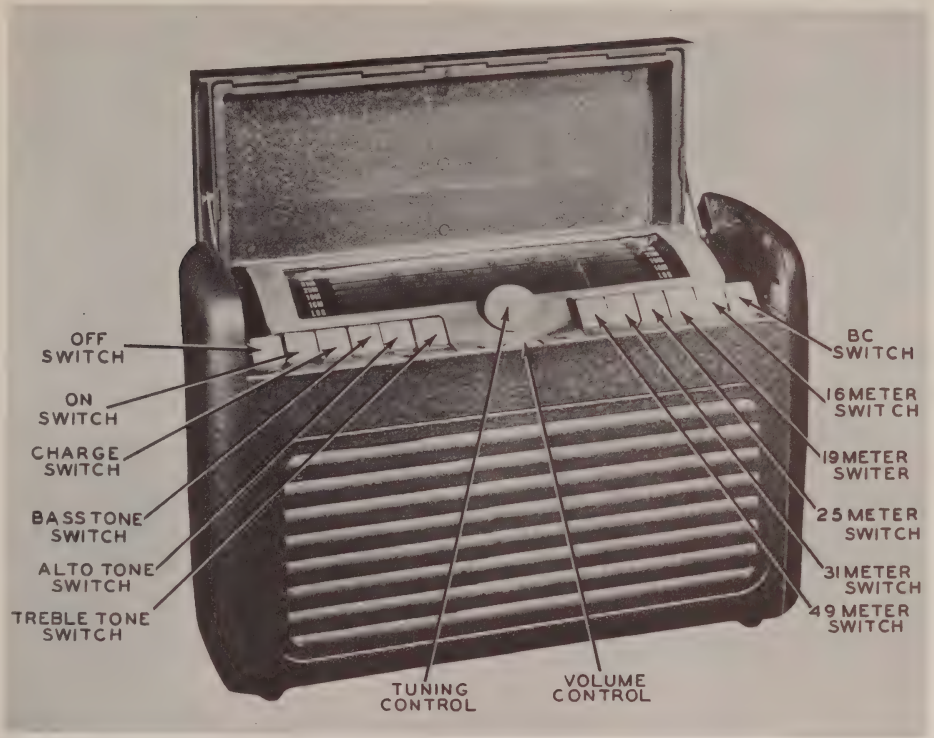
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 475-12

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL ELECTRIC
MODEL 260



GENERAL ELECTRIC MODEL 260

TRADE NAME	General Electric, Model 260
MANUFACTURER	General Electric Co., Bridgeport, Conn.
TYPE SET	AC-Batt. Operated Portable Superneterodyne with Pushbutton Tuning and Self Contained Loop Antenna.
TUBES (SIX)	Types, 1LN5 RF Amp., 1LC6 Converter, 1LN5 1st IF Amp., 1LN5 2nd IF Amp., 1LH4 Det.-AVC-AF, 3Q5 Power Output.
POWER SUPPLY	110-120 Volts AC or 2 Volt Storage Battery
RATING	.180 Amp. @ 117 Volts AC or 1.9 Amp. @ 2.1 Volts DC
TUNING RANGE -	BROADCAST 450-1600KC SHORT WAVE 5.9-6.5MC, 9.5-9.85MC, 11.65-11.9MC, 15.07-15.35MC, 17.65-17.9MC.

GENERAL ELECTRIC
MODEL 260

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1947 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1LN5	1LN5	7AO	
2	Converter	1LC6	1LC6	7AK	
3	1st IF Amp.	1LN5	1LN5	7AO	
4	2nd IF Amp.	1LN5	1LN5	7AO	
5	Det.-AVC-AF	1LH4	1LH4	5AG	
6	Power Output	3Q5GT/G	3Q5GT/G	7AP	

CAPACITORS

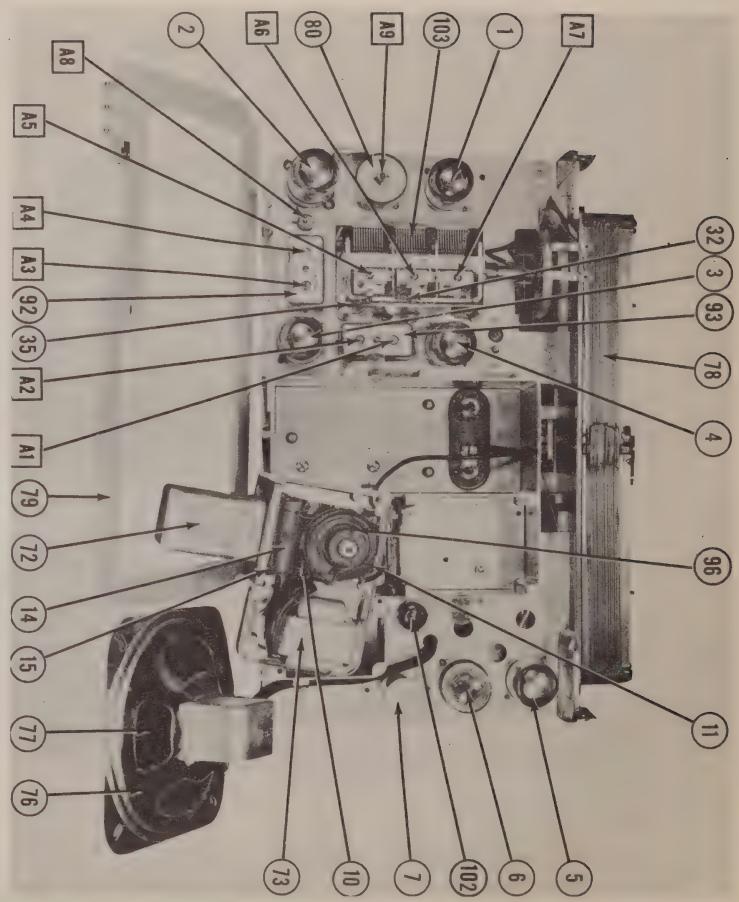
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	15	150	RCE-007	EL-221	AF44D	UP2215	FP302	LT-351	■ Filter
B	15	150							▲ "
C	1200	1.5		UHC1500	HCLV12-1000	BRH610			RF Filter
8	10	150	RCE-012	UT-121	PRS150-12				Filter
9	1200	1.5	RCE-016	UHC1500	HCLV12-1000	BR610	TC310	DGM-1500-6	RF Filter
10	.5	120	RCC-070	1122		HC1900B	RF480		Hash Filter
11	.5	120	RCC-070	1122		HC1900B	RF480		" "
12	.5	120	RCC-069	1122		HC1900B	RF480		RF Filter
13	.5	120	RCC-068	1122		HC1900B	RF480		" "
14	.003	1500	RCC-073	TR-23	1684-003	MD16D3	OW342	XTIMS10-.003	Buffer
15	.05	600	UCC-048	TC-15	684-05	DT6S5	TP415	S-6-05	Hash Filter
16	.1	400	UCC-030	TC-1	484-.1	DT4P1	TP428	S-4-1	Tone Compensation
17	.005	600	UCC-039	TC-25	684-005	DT6D5	TP408	S-6-005	" "
18	.02	600	UCC-041	TC-12	684-02	DT6S2	TP412	S-6-02	Output Plate Bypass
19	.01	600	UCC-040	TC-11	684-01	DT6S1	TP410	S-6-01	Audio Coupling
20	.25	600	UCC-032	TC-2	684-.25	DT6P25	TP420	S-6-25	Audio Plate Decoup.
21	.005	600	UCC-039	TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
22	.05	400	UCC-048	TC-15	484-05	DT4S5	TP426	S-4-05	" "
23	.05	400	UCC-048	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
24	.05	400	UCC-048	TC-15	484-05	DT4S5	TP426	S-4-05	1st IF Plate Decoup.
25	.1	400	UCC-030	TC-1	484-.1	DT4P1	TP428	S-4-1	Conv. Screen Bypass
26	3300	600	UCU-064	1FM-23	1467-003	1W5D3	MC461	MW.5-23	Line Bypass
27	3300	600	UCU-064	1FM-23	1467-003	1W5D3	MC461	MW.5-23	" "
28	150	600	UCU-1032	1FM-315	1468-00015	5W5T15	MC236	MO.5-315	Tone Compensation
29	100	600	UCU-028	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	RF Coupling
30	100	600	UCU-028	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Diode Filter
31	330	600	UCU-1040	1FM-335	1468-00035	5W5T3	MC241	MO.5-33	RF Coupling
32	68		UCN-2506						Fixed Trimmer Cer.
33	330	600	UCU-1040	1FM-335	1468-00035	5W5T3	MC241	MO.5-33	RF Coupling
34	100		RCW-062	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Osc. Grid Capacitor Cer.
35	36		UCW-2017						Fixed Trimmer Cer.
36	750	500	UCG-3049	1FM-37		1D3D7		MO.3-37	Osc. Anode Decoupling
37	3300	600	UCU-064	1FM-23	1467-003	1W5D3	MC461	MW.5-23	Osc. Grid Blocking
38	3000	600	UCU-2563	1FM-23	1467-003	1W5D3	MC461	MW.5-23	Fixed Padder
39	56		UCW-2022						" " Cer.
40	36		UCW-2017						Fixed Trimmer Cer.
41	56		UCW-2022						Fixed Padder Cer.
42	1		UCN-501						Neutralizing Cer.
43	10		UCW-10004						RF Coupling Cer.
44	16		UCW-2009						Fixed Trimmer Cer.
45	13		UCW-2007						Fixed Padder Cer.
46	18		UCW-2010						" "
47	33		UCW-2016						" " "
48	75		UCW-2025						" " "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GEN.ELECT. PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
49	1 Meg.	1	RRC-015				Volume Control (K58Jd2)

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GEN. ELECT. PART No.	IRC PART No.	
50	4.7 Meg.	½	URD-137	BTS-4.7 Meg.	Yl.-Vi.-Grn. RF Coupling
51	4.7 Meg.	½	URD-137	BTS-4.7 Meg.	Yl.-Vi.-Grn. RF Coupling
52	4.7 Meg.	½	URD-137	BTS-4.7 Meg.	Yl.-Vi.-Grn. RF Coupling
53	1 Meg.	½	URD-121	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
54	1 Meg.	½	URD-121	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
55	220KΩ	½	URD-105	BTS-220K	Red-Red-Yl. Oscillator Grid
56	33KΩ	½	URD-085	BTS-33K	Or.-Or.-Or. Oscillator Anode Decoupling
57	82KΩ	½	URD-095	BTS-82K	Gray-Red-Or. Converter Screen Dropping
58	3300Ω	½	URD-061	BTS-3300	Or.-Or.-Red Voltage Dropping
59	2.2 Meg.	½	URD-129	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
60	47KΩ	½	URD-089	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
61	330KΩ	½	URD-109	BTS-330K	Or.-Or.-Yl. Diode Load
62	12KΩ	½	URD-075	BTS-12KΩ	Br.-Red-Or. Degeneration
63	4.7 Meg.	½	URD-137	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
64	220KΩ	½	URD-105	BTS-220K	Red-Red-Yl. AF Plate Load
65	68KΩ	½	URD-093	BTS-68K	Blue-Gray-Or. AF Plate Decoupling
66	1 Meg.	½	URD-121	BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
67	2700Ω	½	URD-059	BTS-2700	Red-Vi.-Red Degeneration
68	1200Ω	½	URD-051	BTS-1200	Br.-Red-Red Tone Compensation
69	7.5Ω	½	RRW-018		Vi.-Grn.-Gold Filament String
70	1500Ω	1	URE-053	BTA-1500	Br.-Grn.-Red Filter
71	10KΩ	½	URD-073	BTS-10K	Br.-Blk.-Or. "

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				GENERAL ELECTRIC PART No.	MALLORY PART No.	RADIART PART No.	
72	Synchronous	2	115	REV-001			

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	GENERAL ELECTRIC PART No.	STANCOR PART No.	THORDARSON PART No.	
73	2.05V DC @ 1.5A	300V CT @ .018A			RTV-001			

TRANSFORMER (CHARGING)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	GEN. ELECT. PART No.	STANCOR PART No.	THORDARSON PART No.	
74A	117V AC @ .09A	5.6V CT @ 1.6A			RTC-001	T-19FS11		†Use bracket to mount replacement horizontally. Alternate transformer.
B					RTC-002			

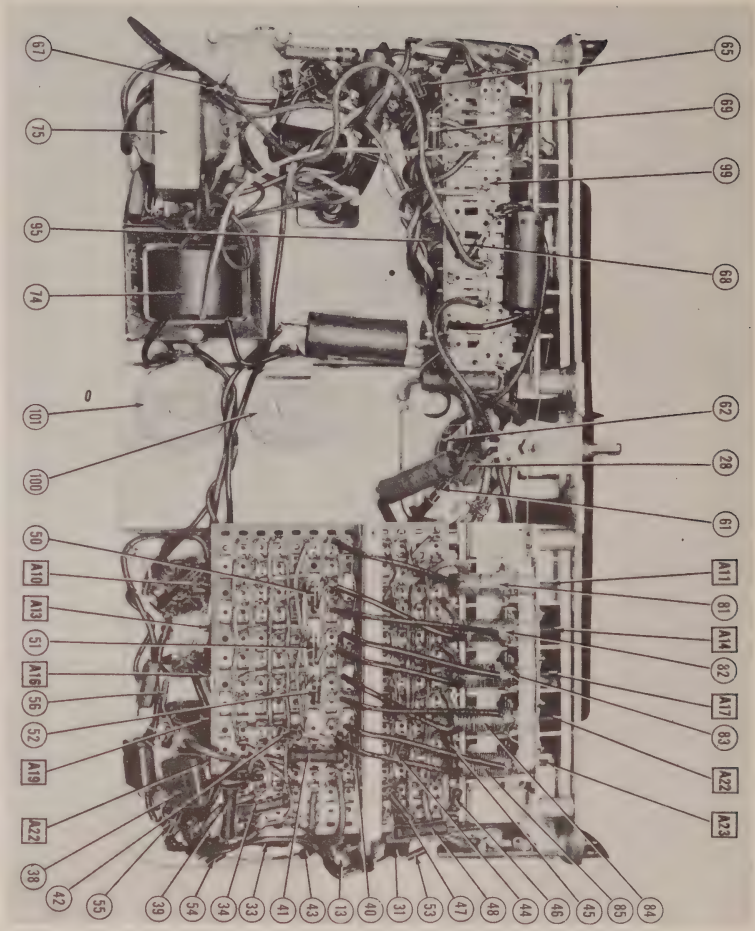
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GEN. ELECT. PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
75	13000Ω	3.4Ω	330Ω	.38Ω	RTO-007	A-3831	TZ2586*		*Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GENERAL ELECTRIC PART No.	JENSEN PART No.		
76	FIELD	VC IMP.	L0P-54E			
	PM	3.4Ω				
77	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			
	5-1/4"	1/2"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

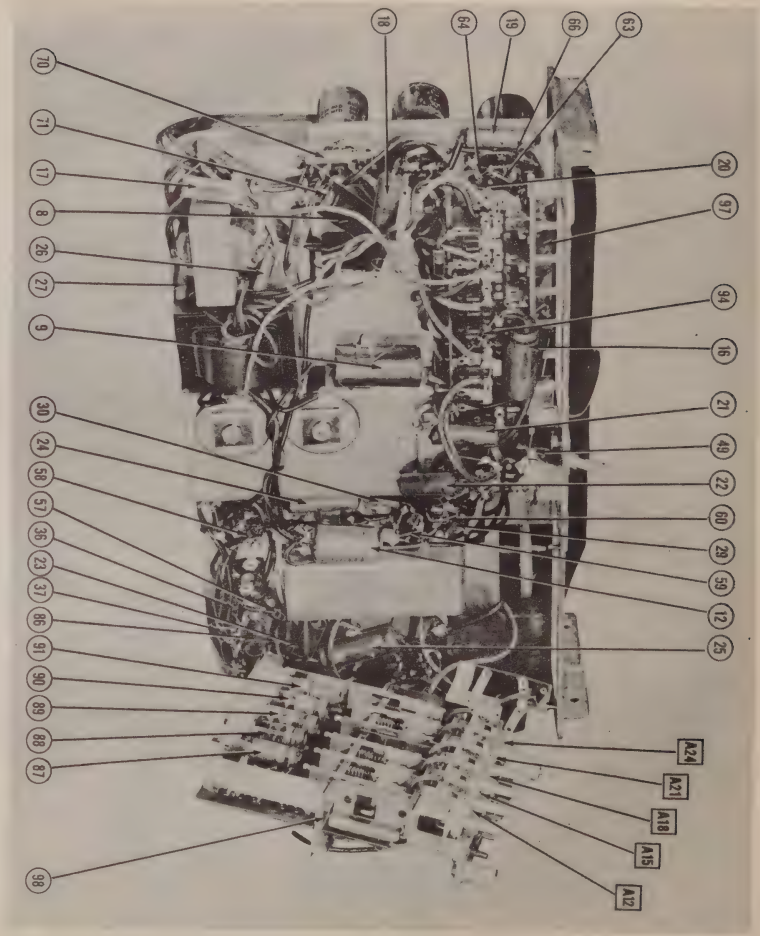
R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA GEN. ELECT. PART No.	REPLACEMENT DATA MEISSNER PART No.	
78A	Loop Ant. (Int.)		1.2Ω	RLL-012		(Crinkle Brown)
B	" "		1.2Ω	RLL-019		(Crinkle Grey)
C	" "		1.2Ω	RLL-020		(Hammertone Grey)
D	" "		1.2Ω	RLL-021		(Hammertone Blue Green)
E	" "		1.2Ω	RLL-022		(Hammertone Copper)
79	" "(Ext.)		0Ω	RLL-007		
80	BC RF Coil	3.1Ω	4.5Ω	RLB-011		Original Part K65J605-1
81	49M " "		.4Ω	RLB-012		
82	31M " "		.2Ω	RLB-013		
83	25M " "		.1Ω	RLB-014		
84	19M " "		.1Ω	RLB-015		
85	16M " "		.1Ω	RLB-016		
86	BC Osc. "	1.3Ω	6Ω	RLC-018		
87	49M " "		1.5Ω	RLC-035		
88	31M " "		.7Ω	RLC-036		
89	25M " "		.6Ω	RLC-037		
90	19M " "		.2Ω	RLC-038		
91	16M " "		.1Ω	RLC-039		
92	Input IF	6Ω	6Ω	RTL-028		Original Part P64J345-5
93	Output IF	6Ω	6Ω	RTL-028		Original Part P64J346-5
94	IF Plate Choke		45Ω	RLP-009		
95	RF Choke		6Ω	RLF-004		
96A	" "		0Ω	RLF-001		96A & 96B wound on same form
B	" "		5.5Ω			

MISCELLANEOUS

ITEM No.	PART NAME	GEN. ELECT. PART No.	NOTES
97	Bias Cell	RBC-001	
98	Band Switch	RDX-022	Pushbutton Assembly
99A	Power Switch	RSP-003	" "
B	Tone Switch	RSP-003	" "
100	Selenium Rect. }	REX-001	Complete Assby.
101	" " }		
102	Fuse	REF-001	3AG-¼ Amp.
103	3 Gang Var. Cap	RCT-011	(36-582 MMF each section)
	Trimmer Assb'y.	RCY-012	Ant. Trimmer Strip
	Pushbutton	RDB-005	Single Button
	Dial Cord & Spring	RDC-011	
	Escutcheon	RDE-009	Dial
	Knob	RDK-020	Tuning
	"	RDK-033	Volume
	Pointer Assb'y.	RDP-013	
	Dial Scale	RDS-019	
	Push Button	RDX-017	Charge-Tone PB & Escutcheon Assby.
	" "	RDX-018	Band Select PB & Escutcheon Assby.
	Knob	RHK-001	Lock Mech. (Crinkle Brown)
	"	RHK-002	" " (" Grey)
	"	RHK-003	" " (Hammertone Grey)
	"	RHK-004	" " (Hammertone Blue-Green)
	"	RHK-005	" " (Hammertone Copper)
	Handle	RHY-001	Case Cover (Crinkle Brown)
	"	RHY-002	" " (Crinkle Grey)
	"	RHY-003	" " (Hammertone Grey)
	"	RHY-004	" " (Hammertone Blue-Green)
	"	RHY-005	" " (Hammertone Copper)
	Plug	RJP-014	Battery Contact Term. Pins

CHASSIS—BOTTOM VIEW



ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer to last reference mark at low freq. end. of dial.

All alignment should be done with receiver in cabinet. Remove snap cover from bottom of receiver in order to gain access to SW Band Osc. adjustments. Remove pushbutton band switch escutcheon to reach SW Ant. and RF adjustments.

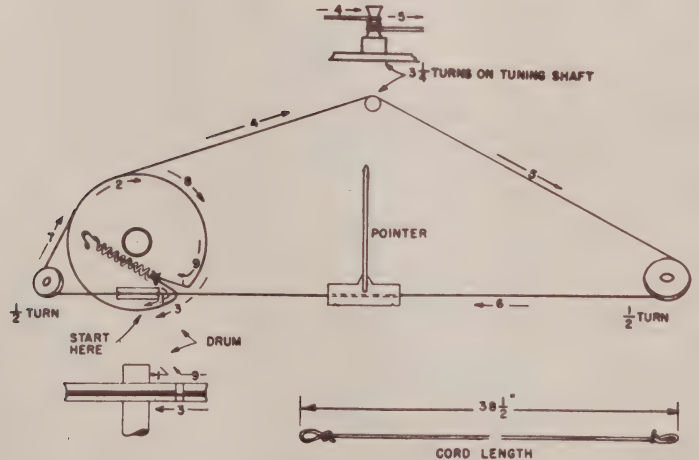
Remove front panel from receiver and splice a 12" lead to green lead that connects to the ungrounded side of speaker. Thread this spliced lead into rear compartment. Replace front cover. Connect output meter across this lead and chassis.

When aligning RF section fashion a loop of several turns of wire and radiate signal into loop of receiver.

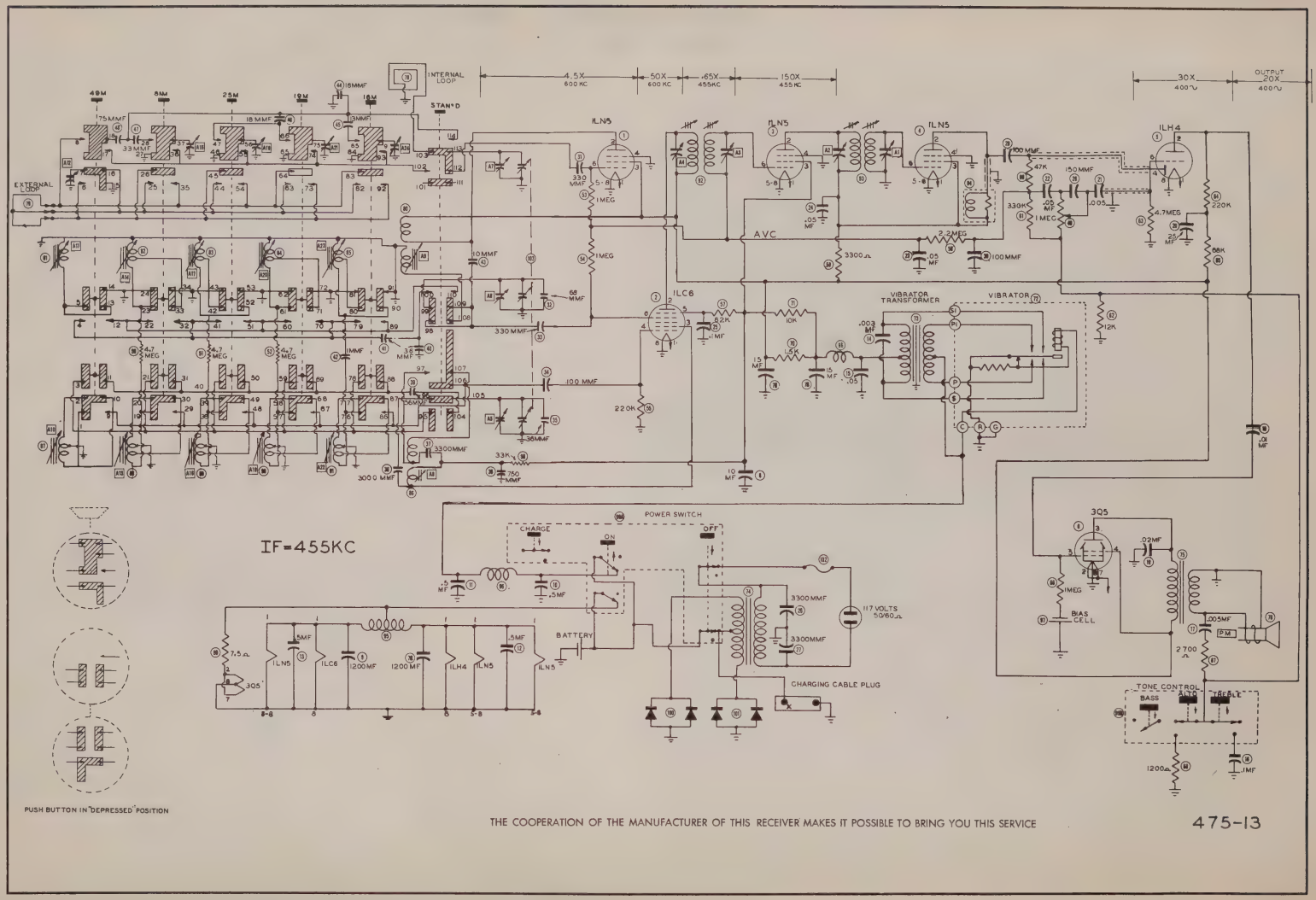
Volume should be at maximum, output of signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

After each band is aligned check to see that the oscillator is working on the high frequency side of incoming signal. To do this leave receiver dial setting unchanged, tune signal generator 910KC above alignment frequency and the image response should be heard.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to center stator of variable. Low side to chassis.	455KC	Stan'd. BC	Variable fully closed	See Notes	A1,A2, A3,A4.	Adjust for maximum output
	Loop	1500KC	"	1500KC	"	A5	Fashion loop of several turns of wire and radiate signal into receiver loop. Remove snap buttons on back cover and close back cover while adjusting A5, A6, A7, A8 and A9. Adjust for maximum output.
	"	1500KC	"	Tune maximum output.	"	A6,A7.	"
	"	580KC	"	"	"	A8,A9.	Rock variable and adjust for maximum output. Repeat last three steps until no further improvement can be made.
	"	6.1MC	49M	6.1MC	"	A10	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A11,A12	Rock variable and adjust for maximum output.
	"	9.6MC	31M	9.6MC	"	A13	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A14,A15	Rock variable and adjust for maximum output.
	"	11.8MC	25M	11.8MC	"	A16	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A17,A18	Rock variable and adjust for maximum output.
	"	15.22MC	19M	15.22MC	"	A19	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A20,A21	Rock variable and adjust for maximum output.
	"	17.8MC	16M	17.8MC	"	A22	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A23,A24	Rock variable and adjust for maximum output.



Dial Stringing Diagram



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

475-13

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by shorting to chassis.

NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN AC-DC & BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LN5	4.35 V.DC	92 V.DC	92 V.DC	0 V.	0 V.	0 V.	0 V.	0 V.
2	1LC6	4.35 V.DC	93 V.DC	33 V.DC	0 V.	30 V.DC	0 V.	0 V.	0 V.
3	1LN5	4.35 V.DC	82 V.DC	93 V.DC	0 V.	0 V.	0 V.	93 V.DC	0 V.
4	1LN5	4.35 V.DC	82 V.DC	82 V.DC	0 V.	0 V.	0 V.	0 V.	0 V.
5	1LH4	4.35 V.DC	7.3 V.DC	0 V.	-3 V.DC	∓	0 V.	0 V.	0 V.
6	3Q5GT/G	0 V.	1.4 V.DC	88 V.DC	92 V.DC	∓	87 V.DC	1.4 V.DC	0 V.

∓ DO NOT MEASURE THIS POINT EXCEPT WITH VACUUM TUBE VOLTMETER.

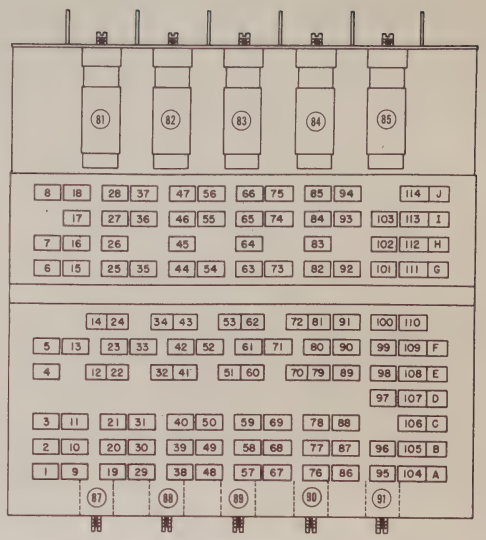
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LN5	*	80 K Ω	80 K Ω	0 Ω	*	3.2 MEG.	2.2 MEG.	*
2	1LC6	*	80 K Ω	113 K Ω	200 K Ω	162 K Ω	3.2 MEG.	2.2 MEG.	*
3	1LN5	*	83 K Ω	80 K Ω	0 Ω	*	2.2 MEG.	80 K Ω	*
4	1LN5	*	83 K Ω	83 K Ω	0 Ω	*	5.5 Ω	2.2 MEG.	*
5	1LH4	*	368 K Ω	INF.	370 K Ω	∓	4 MEG.	INF.	*
6	3Q5GT/G	INF.	*	80 K Ω	80 K Ω	∓	148 K Ω	*	*

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

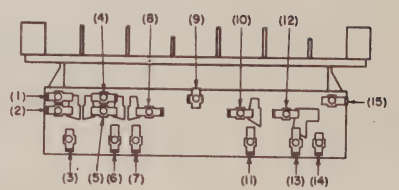
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



TERMINALS A THROUGH J ARE NON-OPERATING LUGS ON THE SWITCH AND ARE USED ONLY FOR TIE-IN CONNECTIONS.

Band Selector Switch Terminal Diagram



(1) TO (102)
(2) TO JUNCTION (74) & (28)
(3) TO JUNCTION (69) & 3Q5GT FIL.(28?)
(4) TO X & CENTER TAP (74) SECONDARY
(5) TO BATTERY (+)
(6) TO (18)
(7) TO (85) (CENTER) & (88)
(8) TO BATTERY (+)
(9) TO GND.
(10)(12) TO (67)
(11) TO (88)
(13) TO (16)
(14) TO (49) & (21)
(15) TO (21) & (83)

Operations Switch Wiring Diagram

BATTERY INFORMATION

The receiver uses a 2-volt Willard Radio Battery No. 25-2 or equivalent. It has a 25 ampere-hour capacity and should be cared for in the same manner as any other storage battery.

CHARGE INDICATOR

The degree of charge of the battery can be determined by raising the back cover of the radio and referring to the charge ball indicators visible through the hole in the metal battery case.

If the battery is fully charged, two indicator balls will be visible at the surface of the liquid in the battery. When the battery discharges, these ball indicators will sink and disappear in the following order:

1. Green indicator sinks when approximately 20 per cent of battery capacity has been discharged.
2. The red ball sinks when battery is 80 per cent discharged.

On charge, the balls rise or float in the reverse order and the charge may be stopped when both balls appear in the opening.

TO CHARGE BATTERY

The battery is charged by merely plugging the receiver power cord in the rated a-c power outlet and depressing the CHARGE push button. Frequent check should be made of the charge indicator and when both indicator balls are visible, the battery is adequately charged. Charging the battery after all indicator balls are visible will not harm the battery except that it will evaporate the water faster. A complete discharged battery will be restored usually within 20 to 30 hours.

When operating the receiver from the AC house current, the battery floats or is being charged at a slow rate. Thus, if you wish to operate the receiver at the same time that you are charging even a fully discharged battery, plug the power cord in the AC receptacle and depress the ON pushbutton. Prolonged operation in this manner usually will cause the battery potential to stabilize at some voltage determined by the line voltage and the characteristics of the charging circuit components. The degree of charge obtainable with this method of operation likewise is dependent on the line voltage and the characteristics of the charging circuit components.

BATTERY OPERATING INSTRUCTIONS

1. Add distilled or tap water in the filler cap at sufficiently frequent intervals to keep liquid level at indicator mark as viewed through opening in battery case. DO NOT OVERFILL as this impairs the nonspill feature.
2. Whenever possible, it is best not to allow the battery to become discharged to the extent that both indicators disappear.

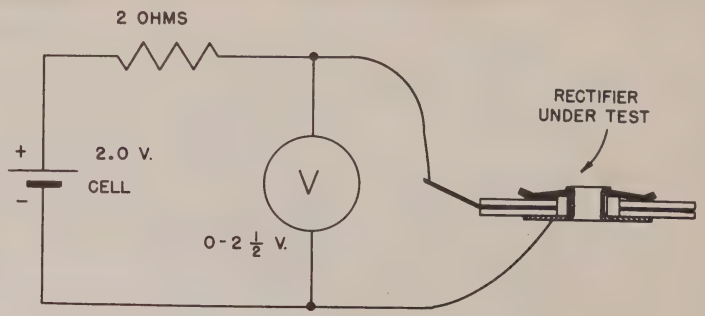
However, if both indicators have sunk, the battery should be recharged immediately or within 24 hours.

3. A battery will continually discharge at a slow rate even when not in use. For this reason, monthly checks should be made of the charge condition, and the battery should be placed on charge when necessary. This will prevent damage to the battery such as freezing during cold weather.

BATTERY INSTALLATION

The following instructions should be carefully followed in installing a battery, or replacing an old one:

1. Remove new battery from packing carton.
2. If needed, add water to bring liquid level to indicator mark on battery container. Do not overfill.
3. Raise back cover on radio, remove battery case cover. The latter is removed by unclipping the two catches. Pry off cover.
4. Unplug old battery if present, and replace with new battery.
5. Place battery on charge, if necessary, as described in a previous paragraph, until both indicators are showing in the opening in the case cover.



Rectifier Test Circuit

CHARGER CHARACTERISTICS

Testing the operation of the rectifier unit.-A 1/4-ampere fuse is used in series with with primary of the charger transformer. If the battery does not show any signs of becoming charged after a reasonable length of time, check the fuse. If it is necessary to replace the fuse, use a 1/4-ampere, Type 3AG fuse.

If one or more of the copper-oxide discs of the rectifier unit are defective, the charger will not operate properly. To test the rectifier unit operation, remove the battery from the unit and reconnect it in series with a d-c ammeter capable of reading at least two amperes. Plug the power cord into a 105-125-volt, 50 or 60 cps, a-c supply, and depress the CHARGE pushbutton. With the ac line voltage at 117 volts, the average charging current should read about 1.9 amperes at 2.1 volts battery. Care must be excercised in making this test as the charging circuit is of extremely low resistance. Very heavy leads must be used, and the use of an ammeter having only 0.05 ohms resistance will introduce considerable error. If the line voltage is greater that 117, or the battery voltage is lower that 2.1 volts, the charging current will be greater. If the current is much less that 1.9 amperes at the rated line voltage of 117 volts, one or more of the copper-oxide discs may be defective.

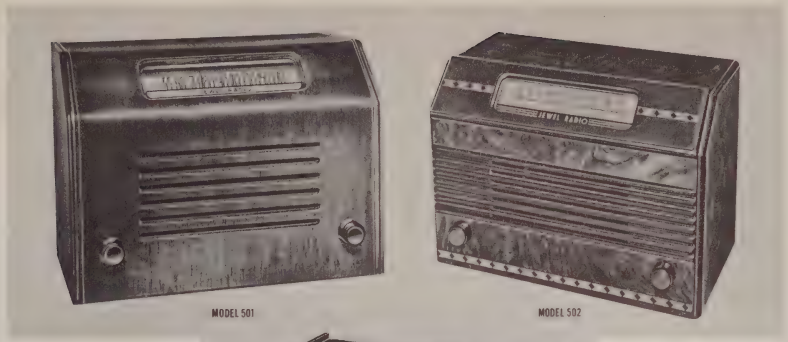
Testing the individual rectifier discs. - Two rectifier assemblies are used in the receiver, each assembly consisting of two rectifier discs held together by an eyelet. A cross section of a rectifier assembly is shown in sketch . The center plate of the assembly is positive and is provided with a soldering tab. A copper-oxide rectifier disc is located on each side of the center plate. The rectifier disc conducts when the positive potential is applied to the copper-oxide surface. The copper oxide is a dark purple coating which has been plated with nickel to afford a good surface contact to the copper oxide. If either or both of the rectifier discs in an assembly become defective, the entire assembly should be replaced.

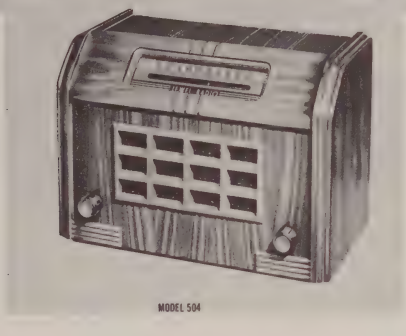
To check the rectifier assembly, the following tests are recommended. In the conducting direction, the rectifier assembly should pass 0.5 ampere or more when 1/2 volt is impressed across it. If a d-c ammeter is not available for measuring currents as high as 0.65 ampere, the circuit shown above can be used for this check. The 2.00-ohm resistance should be fairly accurate. The voltage across the rectifier assembly should read 0.7 volt or less; if this voltage exceeds 0.7 volts, the assembly is defective and should be replaced.

The reverse current flow is as important as the above test and is made as follows: Reverse the battery polarity in the test circuit described for current check, disconnect the voltmeter, and place a milliammeter that will read 10 ma. in series with a lead to one of the battery terminals. A suitable meter fuse should be used in series with the milliammeter to prevent damage to the meter in case the assembly under test is shorted. The reverse current should not exceed 10 ma. If the current is considerably above this value, the rectifier assembly should be discarded.

If a millammeter is not available, a rough check may be made by measuring the resistance of the assembly in the conducting direction on the low-resistance range of an ohm-meter. The resistance should measure at least 300 ohms.

JEWEL
MODELS 500, 501, 502, 503, 504,
505 SERIES





JEWEL
MODELS 500, 501, 502, 503, 504,
505 SERIES

JEWEL MODEL 501B

TRADE NAME	JEWEL, Models 500A, B, C, 501A, B, C, 502A, B, C, 503A, B, C, 504A, B, C 505A, B, C
MANUFACTURER	Jewel Radio Corp., 583 Sixth Ave., New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (FOUR)	Types, 12SA7 or 14Q7 or 12BE6 Converter, 12SK7 or 14A7/12B7 or 12BA6 IF Amp., 12SQ7 or 14B6 or 12AT6 Det.-AVC-AF, 50L6GT or 50A5 or 50B5 Power Output.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	550-1725 RATING .275 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer in center of 1st 5 at low frequency end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and chassis. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	456KC	Tuning cap fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD	High side to ext. ant. lead. Low side to chassis.	1725KC	"	"	A5	Adjust for maximum output.
200MMFD	"	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: JEWEL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	Converter		12SA7	8R	Used in Models 500A to 505A
B	"		14Q7	8AL	" " " 500B to 505B
C	"		12BE6	7CH	" " " 500C to 505C
2A	IF Amp.		12SK7	8N	" " " 500A to 505A
B	" "		14A7/12B7	8V	" " " 500B to 505B
C	" "		12BA6	7CC	" " " 500C to 505C
3A	Det.-AVC-AF		12SQ7	8Q	" " " 500A to 505A
B	" " "		14B6	8W	" " " 500B to 505B
C	" " "		12AT6	7BT	" " " 500C to 505C
4A	Power Output		50L6GT	7AC	" " " 500A to 505A
B	" "		50A5	6AA	" " " 500B to 505B
C	" "		50B5	7BZ	" " " 500C to 505C

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: JEWEL PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	30	150		TA-530	PRSA150-50-30	BRD3515	2N520	M-5030-150	Filter - Yellow
B	50	150							" - Red
6	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
7	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
8	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Audio Coupling
9	.005	400		TC-22	484-005	DT6D5	TP403	S-6-005	" "
10	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
11	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Ant. Isolation
12	250	500		1FM-325	1468-00025	SW5T25	MC240	M0.5-325	Output Grid Bypass
13	250	500		1FM-325	1468-00025	SW5T25	MC240	M0.5-325	IF Bypass Vol. Cont.
14	50	500		1FM-45	1468-00005	SW5S5	MC225	M0.5-45	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: JEWEL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 15A per instructions
C	Switch			M26	41	SW-A	" " " " "

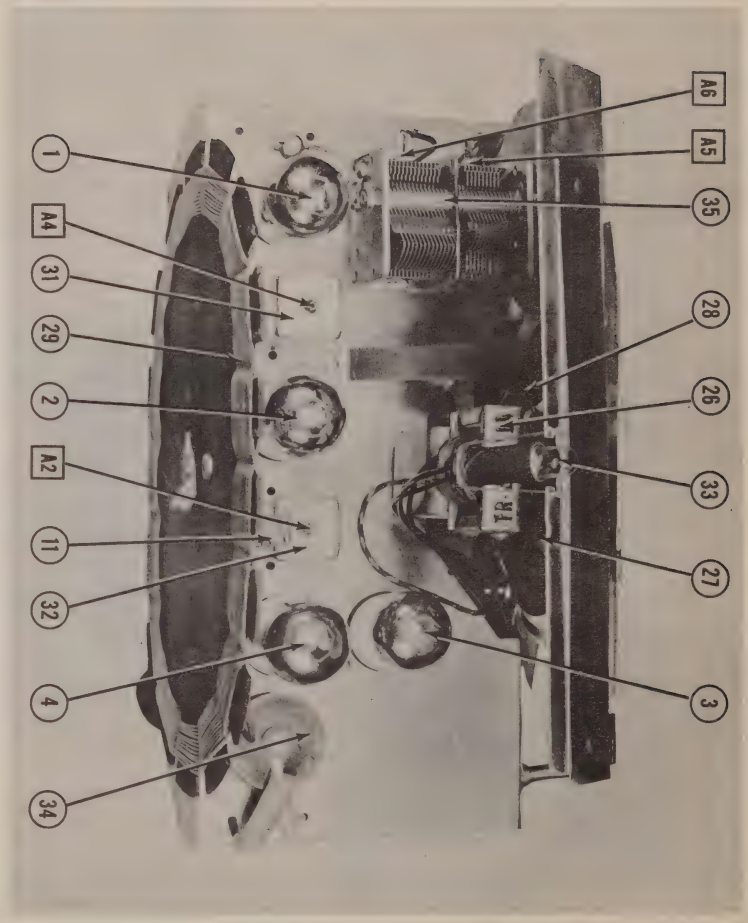
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: JEWEL PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
16	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
17	2.2 Meg.	½		BTS-2.2 Meg	Red-Red-Grn. AVC Network
18	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AF Grid
19	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
20	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid
21	150Ω	1		BW-1-150	Br.-Grn.-Br. Output Cathode
22	2200Ω	2		BT-2-2200	Red-Red-Red Filter
23	47Ω	1		BW-1-47	Yl.-Vi.-Blk. Surge Limiter
24	22Ω	1		BW-1-22	Red-Red-Blk. Pilot Light Shunt
25	200Ω	10		AB-200	Line Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: JEWEL PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26	2000Ω	2.9Ω	140Ω	.6Ω		A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: JEWEL PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107		
27	PM	2.9Ω		Mod. P5-V		
	CONE DIA.	VC DIA.				
28	4-3/4"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

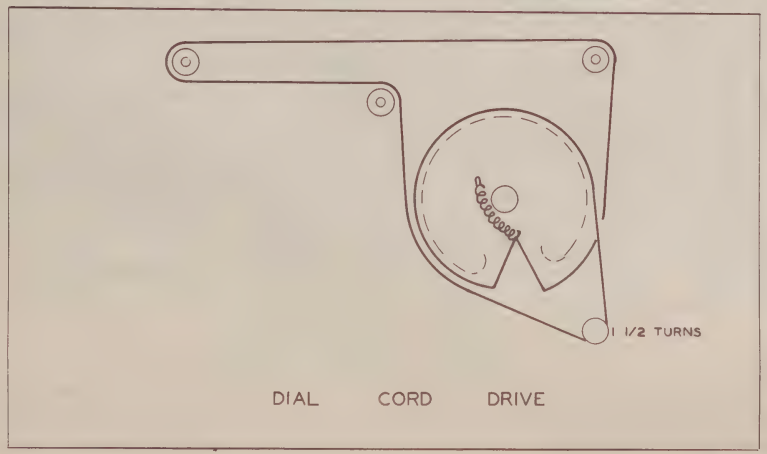
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: JEWEL PART No.	MEISSNER PART No.	INSTALLATION NOTES
29	Loop Ant.	.1Ω	1.3Ω			
30	Osc. Coil		4.5Ω		14-1040	
31	Input IF	9Ω	9Ω		16-6668	
32	Output IF	9.5Ω	9.5Ω		16-6669	

DIAL LIGHT

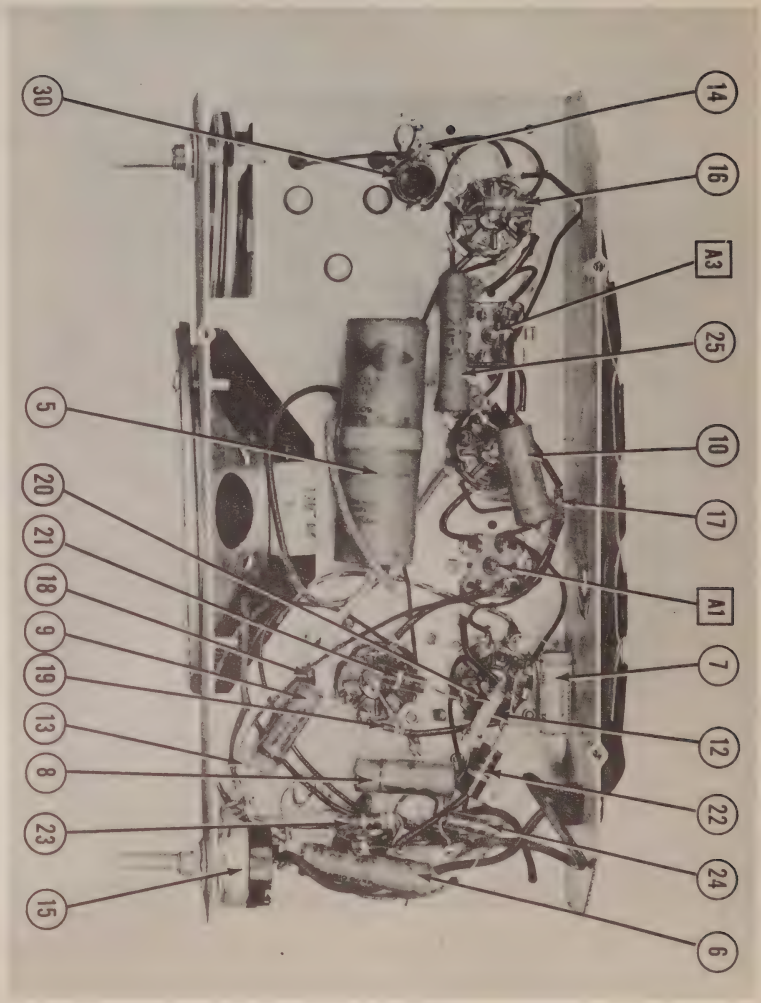
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: JEWEL PART No.		INSTALLATION NOTES
33	Bayonet	6.3	0.25	Blue			Type #4

MISCELLANEOUS

ITEM No.	PART NAME	JEWEL PART No.	NOTES
34	Rectifier		5 Stack Selenium
35	2 Gang Var. Cap		(20-468 MMF, 36-259 MMF)



CHASSIS—BOTTOM VIEW



JEWEL MODELS 500-505 SERIES

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: LAFAYETTE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	Converter	12SA7GT	12SA7GT	8R	
B	"	14Q7	14Q7	8A7	Lock-in
2A	IF Amp.	12SK7GT	12SK7GT	8N	
B	"	7B7	7B7	8V	" "
3A	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
B	"	14B6	14B6	8W	" "
4	Power Output	50L6GT	50L6GT	7AC	
5A	Rectifier	35Z5GT	35Z5GT	6AD	
B	"	35Y4	35Y4	5AL	" "

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: LAFAYETTE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150		TA-440	PRSA150-40-40	BRD4415	2N511	M-2x40-150	Filter - Red
B	40	150							" - Blue
7	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
9	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Audio Coupling
10	.002	600		TC-22	684-002	DT6D2	TP405	S-6-002	" "
11	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	RF Bypass Pwr. Supp.
12	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
13	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Ant. Isolation
14	.001	600		TC-21	684-001	DT6D1	TP404	S-6-001	Audio Plate Bypass
15	220	500		1FM-32	1468-0002	5W5T2	MC237	M0.5-322	IF Bypass Vol. Cont.
16	47	500		1FM-45	1468-00005	5W5Q5	MC225	M0.5-447	Osc. Grid Capacitor
35	25	25		TA-25	PRS25-25	BR252A	TC26	M 25-25	Cath. Bypass *

*Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 17A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

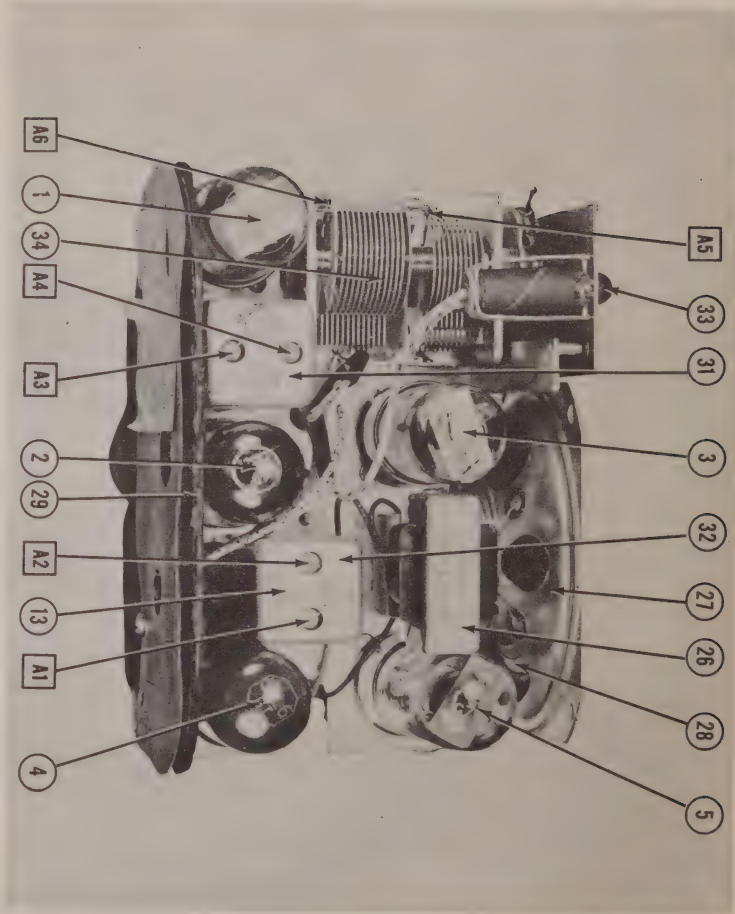
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	IRC PART No.	IDENTIFICATION CODES
18	18Ω	½		BW-½-18	Br.-Gray-Blk. Rectifier Ballast
19	2200Ω	2		BT-2-2200	Red-Red-Red Filter
20	150Ω	1		BW-1-150	Br.-Grn.-Br. Output Cathode-See Note 1
21	150KΩ	¼		BTS-150K	Br.-Grn.-Yl. Output Grid-See Note 2
22	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
23	4.7 Meg.	¼		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid-See Note 3
24	2.2 Meg.	¼		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
25	15KΩ	½		BTS-15K	Br.-Grn.-Or. Oscillator Grid-See Note 4

Note 1 - Not used in all models.
Note 2 - Some models use 470KΩ in this application.
Note 3 - Some models use 10 Meg. in this application.
Note 4 - Some models use 22KΩ in this application.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: LAFAYETTE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
28	2200Ω	3.4Ω	150Ω	.5Ω	Part of 5887-D	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			LAFAYETTE PART No.	JENSEN PART No.		
27	FIELD FM	VC IMP. 3.4Ω	5887-D	ST-133 Mod. P4-X		
28	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

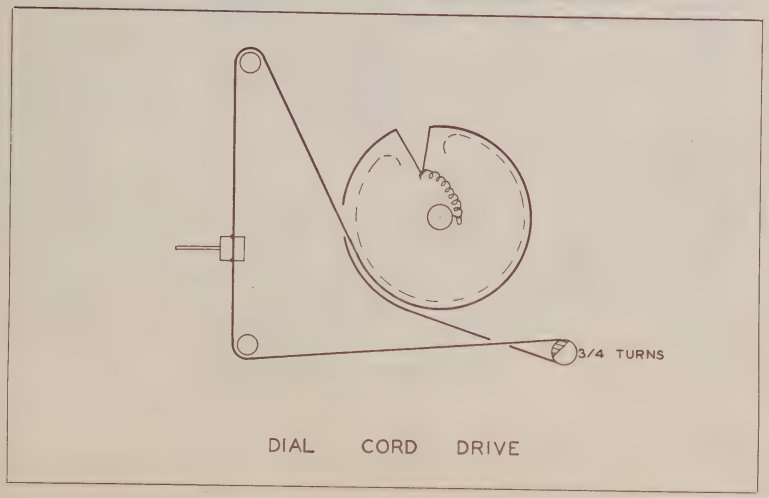
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	LAFAYETTE PART No.	MEISSNER PART No.	
29	Loop Ant.	.2Ω	3.3Ω			
30	Osc. Coil		6.8Ω		14-1040	
31	Input IF	11Ω	11.5Ω	3366	16-6666	
32	Output IF	12Ω	12Ω	3367	16-6667	

DIAL LIGHT

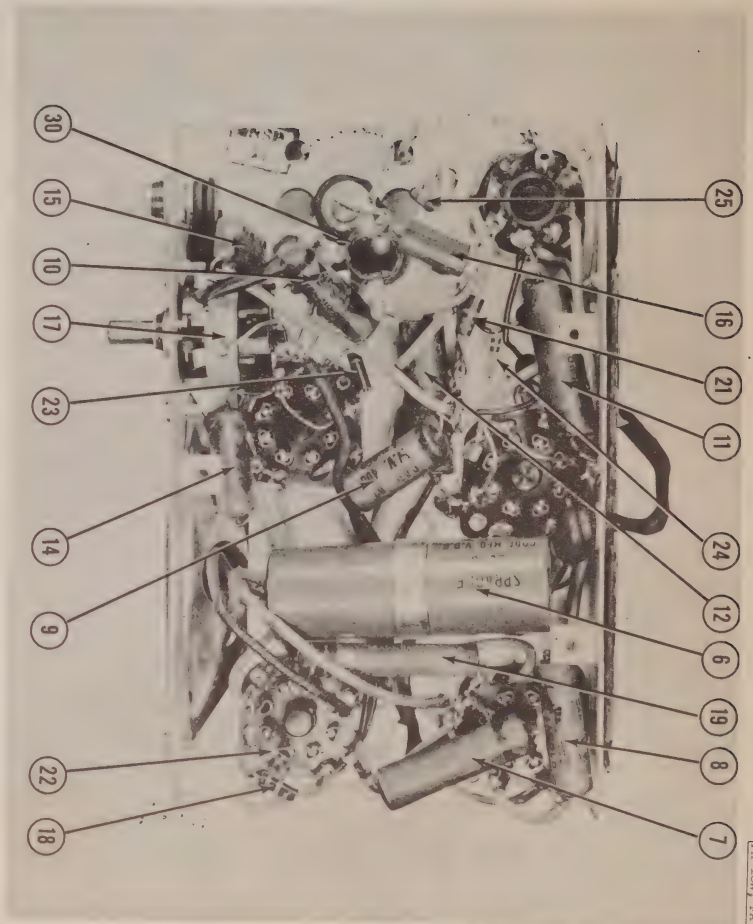
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					LAFAYETTE PART No.		
33	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	LAFAYETTE PART No.	NOTES
34	2 Gang Var. Cap		(26-468 MMF, 28-190 MMF)

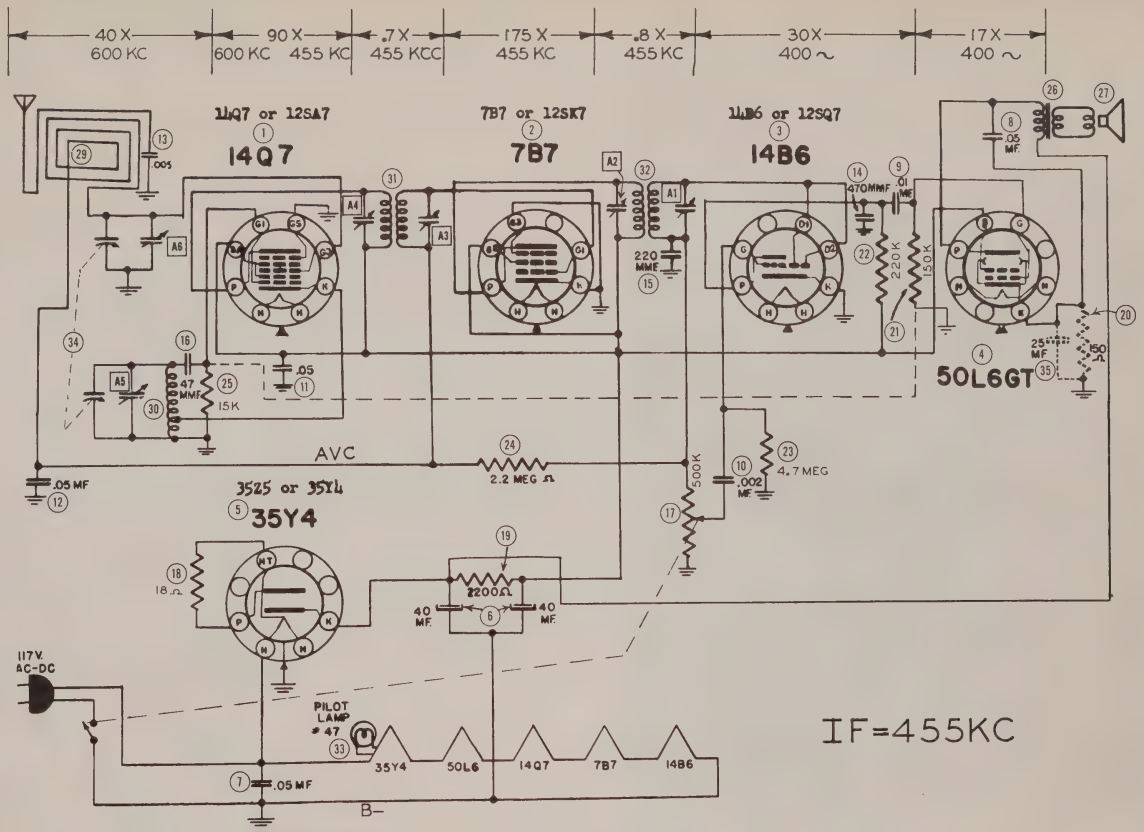


CHASSIS—BOTTOM VIEW



LAFAYETTE MODELS
FA 15W, FA 15W

LAFAYETTE MODELS
FA 15W, FA 15W



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	35V.AC	77 V.DC	77 V.DC	-4.6V.DC	0V.	24V.AC	-.65V.DC
2	12SK7GT	0V.	24V.AC	0V.	-.65V.DC	0V.	77 V.DC	12 V.AC	77 V.DC
3	12SQ7GT	0V.	-.65V.DC	0V.	-2.43V.DC	-2.43V.DC	60 V.DC	12 V.AC	0V.
4	50L6GT	0V.	35V.AC	120V.DC	77 V.DC	-1.35V.DC	77 V.DC	89 V.AC	0V.
5	35Z5GT	0V.	117V.AC	113V.AC	77 V.DC	112V.AC	60V.DC	89 V.AC	120 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0 Ω	32 Ω	60 KΩ	60 KΩ	12 KΩ	.5 Ω	23 Ω	2.4MEG.
2	12SK7GT	0 Ω	23 Ω	0 Ω	2.4 MEG.	0 Ω	60 KΩ	12 Ω	60 KΩ
3	12SQ7GT	0 Ω	4 MEG.	0 Ω	440KΩ	440KΩ	280KΩ	12 Ω	0 Ω
4	50L6GT	0 Ω	32 Ω	60 KΩ	60 KΩ	180 KΩ	60 KΩ	80 Ω	0 Ω
5	35Z5GT	0 Ω	103 Ω	100 Ω	60 KΩ	104 Ω	280 KΩ	80 Ω	60 KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-15

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

LAFAYETTE
MODEL MC13

LAFAYETTE
MODEL MC13

LAFAYETTE MODEL MC13

TRADE NAME	LaFayette, Model MC13
SUPPLIER	Radio Wire Television, Inc., 100 Sixth Ave., New York 13, N.Y.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 or 14Q7 or 12SA7 Converter, 12BA6 or 14A7 or 12SK7 IF Amp., 12AT6 or 14B6 or 12SQ7 Det.-AVC-AF, 50B5 or 50A5 or 50L6GT Power Output, 35W4 or 35Y4 or 35Z5 Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1725KC RATING .250 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning cap. fully closed and set pointer to last reference mark at low end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and chassis. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If an isolation transformer is not used, reduce dummy ant. to .001MFD to reduce hum modulation.
200MMFD	High side to ext. ant. lead. Low side to ext. ground connection	1500KC	1500KC	"	A5	Adjust for maximum output.
200MMFD	"	"	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

LAFAYETTE MODEL MC13

TUBES

ITEM No.	USE	REPLACEMENT DATA: LAFAYETTE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	Converter		12BE6	7CH	
B	"		14Q7	8AL	
C	"		12SA7	8R	
2A	IF Amp.		12BA6	7CC	
B	" "		14A7	8V	
C	" "		12SK7	8N	
3A	Det.-AVC-AF		12AT6	7BT	
B	" "		14B6	8W	
C	" "		12SQ7	8Q	
4A	Power Output		50B5	7EZ	
B	" "		50A5	6AA	
C	" "		50L6GT	7AC	
5A	Rectifier		35W4	5BQ	
B	"		35Y4	5AL	
C	"		35Z5	6AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: LAFAYETTE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	50	150		TA-530	PRSA150-50-30	BRD3515	2N520	M-5030-150	Filter - Green - Red
B	30	150							
7	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.05	200		TC-15	484-05	DT4S5	TP423	S-4-05	Output Plate Bypass
9	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
10	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	" "
11	.0005	600		TC-35	1468-0005	DT6T5	TP403	S-6-0005	Tone Compensation
12	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	" "
13	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
14	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Audio Plate Bypass
15	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	IF Bypass Vol. Cont.
16	50	50J		1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	Osc. Grid Capacitor

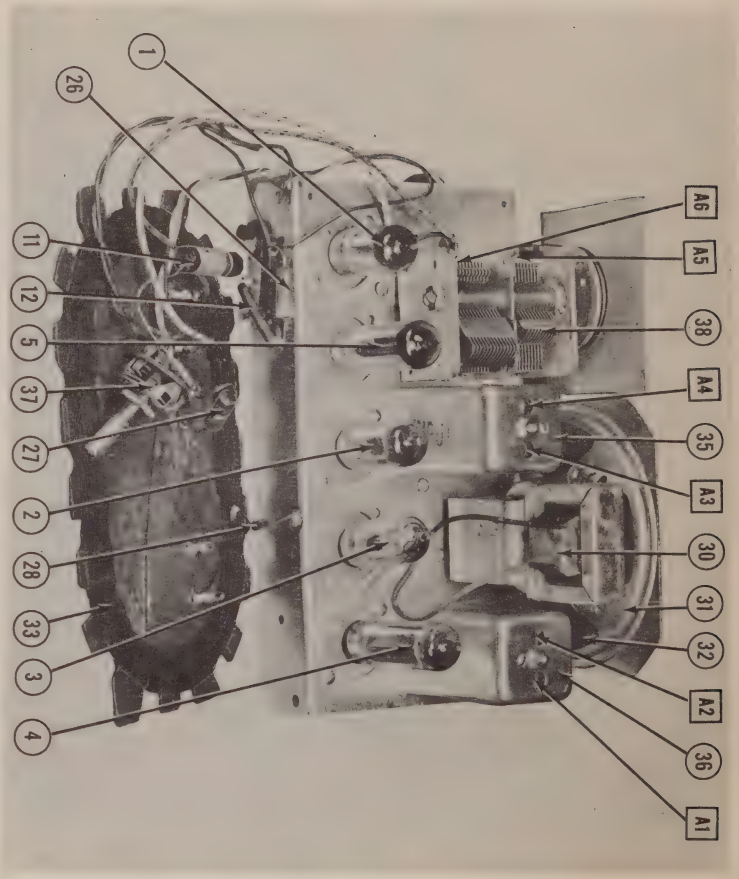
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	500K	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 17A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LAFAYETTE PART No.	IRC PART No.	IDENTIFICATION CODES
18	18KΩ	½		BTS-18K	Br.-Gray-Or. Oscillator Grid
19	150Ω	½		BW-½-150	Br.-Grn.-Br. IF Cathode
20	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
21	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AF Grid
22	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
23	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid
24	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
25	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
26	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Tone Compensation
27	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Series Phono
28	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Phono Motor Isolation
29	30Ω	½		BW-½-33	Or.-Blk.-Blk. Rectifier Ballast

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		LAFAYETTE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
30	2400Ω	3.25Ω	360Ω	.5Ω		A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

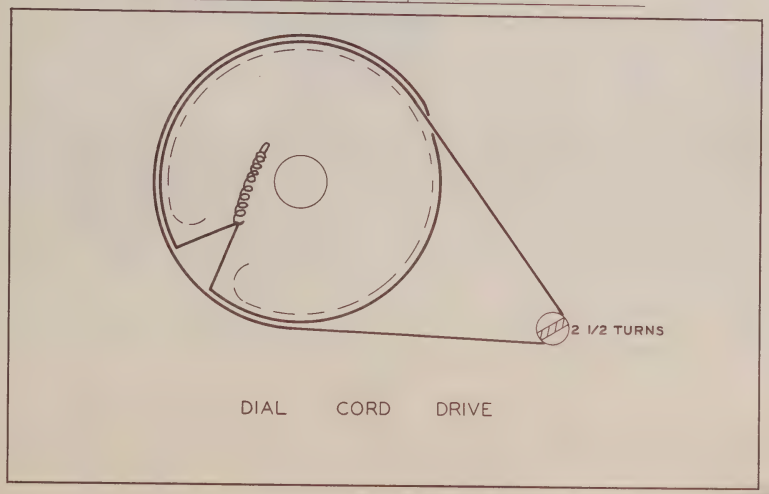
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	LAFAYETTE PART No.	JENSEN PART No.		
31	PM	3.25Ω	SR10000			
	CONE DIA.	VC DIA.				
32	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

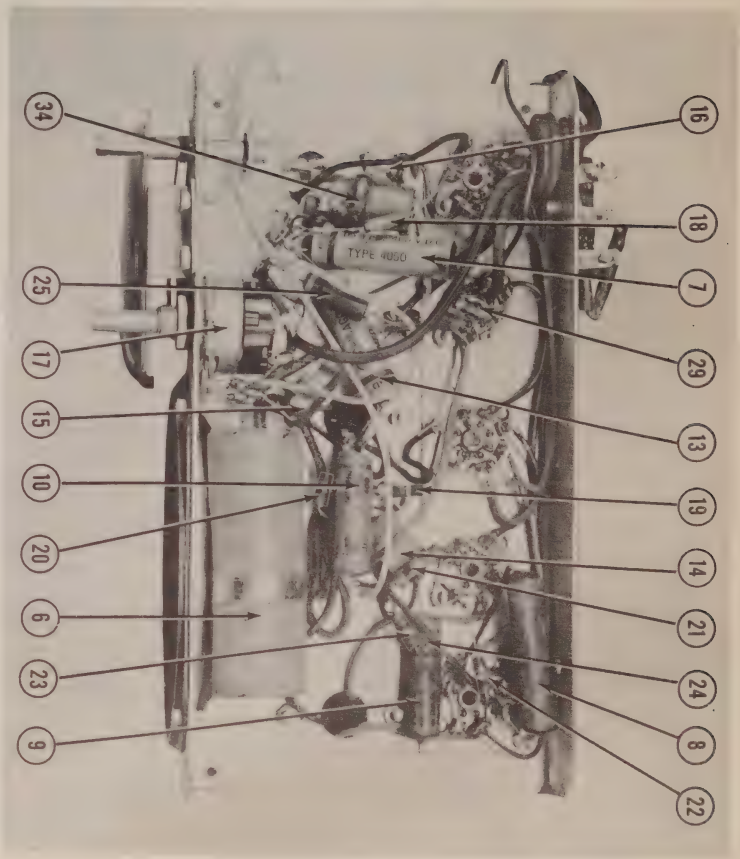
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	LAFAYETTE PART No.	MEISSNER PART No.	
33	Loop Ant.	.1	2.8Ω			
34	Osc. Coil		4Ω		14-1040	
35	Input IF	10.5Ω	10Ω		16-6658	
36	Output IF	31Ω	32Ω		16-6660	

MISCELLANEOUS

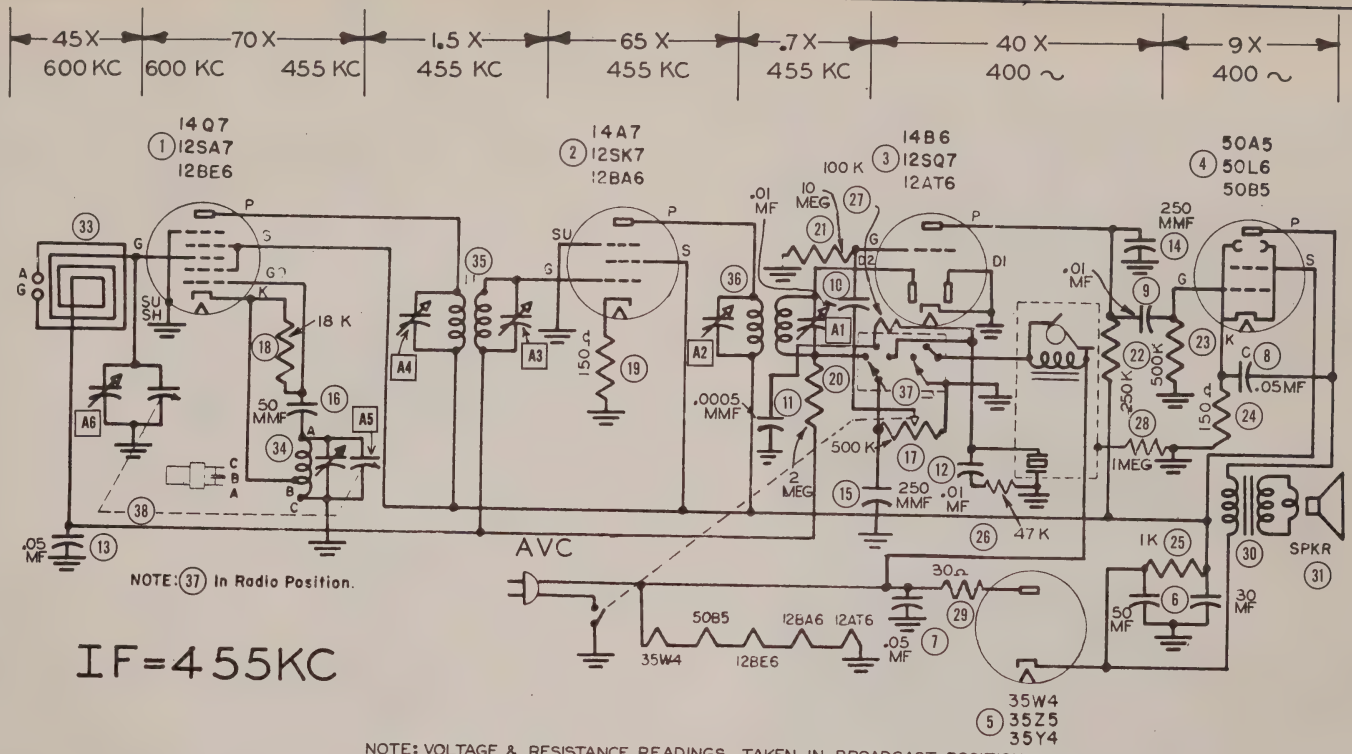
ITEM No.	PART NAME	LAFAYETTE PART No.	NOTES
37	Switch		Radio-Phono
38	Tuning Cap.		2 Gang



CHASSIS—BOTTOM VIEW



LAFAYETTE MODEL MO13



IF=455KC

NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-2.6V.DC	0V.	36V.AC	24V.AC	102V.DC	102V.DC	0V.
2	12BA6	0V.	0V.	24V.AC	12 V.AC	102V.DC	102V.DC	2V.DC
3	12AT6	-1V.DC	0V.	0V.	12 V.AC	0V.	-1V.DC	57V.DC
4	50B5	0V.	6.8V.DC	36V.AC	82V.AC	121V.DC	102V.DC	0V.
5	35W4	117V.AC	0V.	117V.AC	82V.AC	115V.AC	88V.AC	125V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	18 KΩ	0Ω	30Ω	21Ω	70 KΩ	70 KΩ	2.2MEG.
2	12BA6	2.2MEG.	0Ω	21Ω	12Ω	70 KΩ	70 KΩ	140Ω
3	12AT6	10 MEG.	0Ω	0Ω	12Ω	0Ω	450 KΩ	320 KΩ
4	50B5	510 KΩ	130Ω	30Ω	87Ω	70 KΩ	70 KΩ	510 KΩ
5	35W4	110Ω	INF.	110Ω	87Ω	150Ω	91Ω	70 KΩ

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-16

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MAGUIRE MODEL 700E

TRADE NAME	Maguire, Model 700E
MANUFACTURER	Maguire Industries, Inc., W. Putman Ave., Greenwich, Conn.
TYPE SET	AC Operated Combination Phono-Radio Superheterodyne with Loop Antenna
TUBES (SEVEN)	Types, 14Q7 Converter, 7AG7 IF Amp., 14B6 Det.-AVC-AF, 14A4 Phase Inverter, (2) 50L6GT Power Output, 35Z5 Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1700KC RATING .470 Amps. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set left edge of dial pointer saddle 3/4" from left end of dial backplate. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Phono Radio switch should be on treble position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
Direct	High side to ext. ant. lead. Low side to B-.	455KC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
Direct	"	1500KC	5-11/16" from left edge of dial pointer saddle to left end of dial backplate.	"	A5	" " " "
Direct	"	"	Tune for maximum output.	"	A6	" " " "

DISASSEMBLY INSTRUCTIONS

1. Remove three push on type control knobs from front panel.
2. Remove four chassis mounting bolts from bottom of cabinet.
3. Remove two changer mounting bolts from bottom of cabinet.
4. Remove three wood screws holding receiver back panel. Remove panel.
5. Remove four bolts holding changer cover plate. Remove cover plate.
6. Remove phono-motor plug from chassis.
7. Remove phono-pick-up plug from chassis.
8. Remove changer.
9. Loosen clamp holding power cord.
10. Remove screw holding wood block at back of receiver chassis.
11. Remove four screws holding speaker.
12. Remove speaker and chassis.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MAGUIRE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	14Q7	14Q7	8AL	
2	IF Amp.	7AG7	7AG7	8V	
3	Det.-AVC-AF	14B6	14B6	8W	
4	Phase Inverter	14A4	14A4	5AC	
5	Power Output	50L6GT	50L6GT	7AC	50A5 Alternate
6	Power Output	50L6GT	50L6GT	7AC	50A5 Alternate
7	Rectifier	3S23	3S23	4Z	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAGUIRE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	40	150	A10427	TA-440	PRSA150-80-	EZ4415C$	FP357**	M-8040-150	Filter - Blue
B	80	150		UT-401	40				" - Red
9	.05	600	B10417-68	TC-15	684-05	DT6S5	TP415	S-6-05	Line Filter
10	.1	600	B10417-69	TC-1	684-.1	DT6P1	TP418	S-6-1	Line Isolation
11	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
12	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	" " "
13	.001	600	B10417-43	TC-21	684-001	DT6D1	TP404	S-6-001	Audio Coupling †
14	.001	600	B10417-43	TC-21	684-001	DT6D1	TP404	S-6-001	" " ‡
15	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	" "
16	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
17	.001	600	B10417-43	TC-21	684-001	DT6D1	TP404	S-6-001	Audio Coupling
18	.005	600	B10417-47	TC-25	684-005	DT6D5	TP408	S-6-005	Tone Compensation #
19	.1	600	B10417-69	TC-1	684-.1	DT6P1	TP418	S-6-1	Phono Isolation
20	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	AVC Filter
21	.05	600	B10417-68	TC-15	684-05	DT6S5	TP415	S-6-05	" "
22	.05	400	B10417-20	TC-15	484-05	DT4S5	TP426	S-4-05	Fixed Padder *
23	.01	600	B10417-67	TC-11	684-01	DT6S1	TP410	S-6-01	Ant. Isolation
24	.01	400	B10417-17	TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
25	470	500	B10104-16	1FM-35	1468-0005	5W5T5	MC245	MO.5-347	Audio Plate Bypass
26	250	500	B10104-14	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	IF Bypass Diode
27	56	500	B10104-9	1FM-45	1468-00005	5W5Q5	MC225	MO.5-456	Osc. Grid Capacitor

* Not used in all models.
† May be .003 @ 600 in some models.
‡ May be .01 @ 600 in some models.
# May be .001 @ 600 in some models.
$ Parallel 2x40 MFD for 80 MFD-Omit Bypass Section
** Parallel 2x40 MFD for 80 MFD.

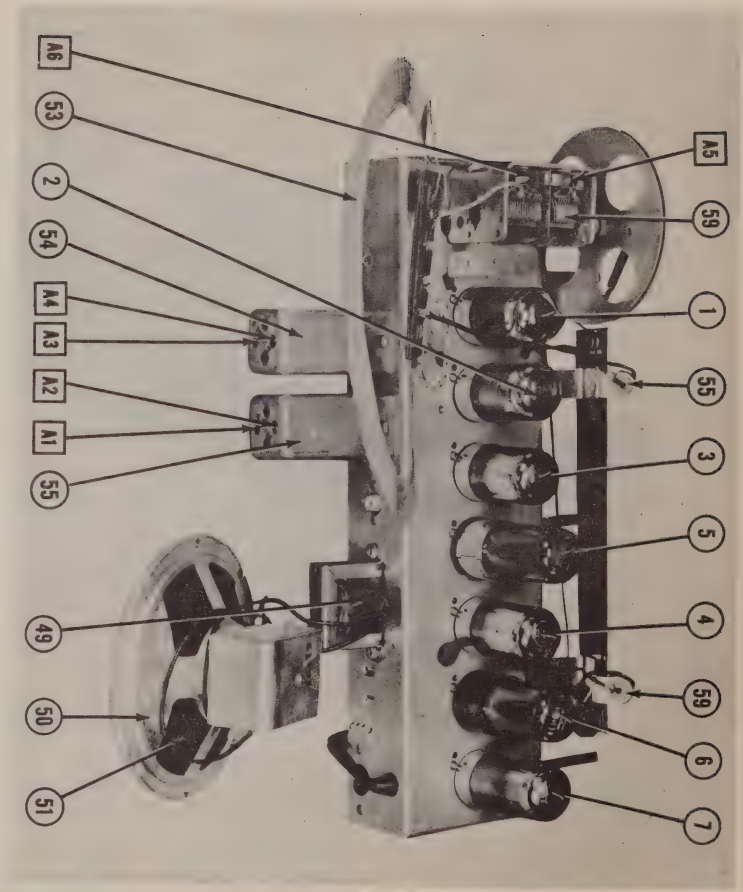
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGUIRE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
28A	2 Meg.	1	A28072-1	MRT449	D13-139X	T-115	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 28A per instructions
C	Switch		" "	M28	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGUIRE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
29	22KΩ	½	B10365-13	BTS-22K	Red-Red-Or. Oscillator Grid
30	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. AVC Network
31	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network-See Note 2
32	220KΩ	½	B10365-7	BTS-220K	Red-Red-Yl. Diode Load
33	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. Series Phono-See Note 1
34	220KΩ	½	B10365-7	BTS-220K	Red-Red-Yl. Phono Shunt-See Note 4
35	33KΩ	½	B10365-12	BTS-33K	Or.-Or.-Or. Tone Compensation
36	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. AF Grid - See Note 2
37	220KΩ	½	B10365-7	BTS-220K	Red-Red-Yl. AF Plate Load
38	33KΩ	½	B10365-12	BTS-33K	Or.-Or.-Or. Phase Inverter Plate Load-See Note 6
39	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. Phase Inverter Grid-See Note 7
40	33KΩ	½	B10365-12	BTS-33K	Or.-Or.-Or. Phase Inverter Cathode-See Note 5

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MAGUIRE PART No.	IRC PART No.	
41	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. Output Grid
42	470KΩ	½	B10365-11	BTS-470K	Yl.-Vi.-Yl. " "
43	100Ω	1	910366-2	BW-1-100	Br.-Blk.-Br. Output Cathode
44	560Ω	1	C10351-72	BTA-560	Grn.-Blue-Br. Filter-See Note 3
45	10Ω	1	C10351-1	BW-1-10	Br.-Blk.-Blk. Surge Limiter-See Note 1
46	220KΩ	½	B10365-7	BTS-220K	Red-Red-Yl. Line Isolating
47	90Ω	10	A10368-2		Line Dropping
48	380Ω	½		BW-½-390	Or.-Gray-Br. IF Cathode.

Note 1 - Not used in all models.
Note 2 - Earlier Models use 10 Meg. in this application.
Note 3 - Earlier Models use 1800Ω in this application.
Note 4 - Earlier Models use 470KΩ in this application.
Note 5 - Earlier Models use 3300Ω in this application.
Note 6 - Earlier Models use 220KΩ in this application.
Note 7 - Earlier Models use 33KΩ in this application.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MAGUIRE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
49	6700Ω CT	3.45Ω	260Ω CT	.4Ω	A28068-2	A-2201 ♦	T22847		♦ Drill one new mounting hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	MAGUIRE PART No.	JENSEN PART No.		
50A B	FM 5"x7"	3.45Ω	C20493-2	ST-105 Mod. P5-X		Alternate Speaker
	CONE DIA.	VC DIA.				
51	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MAGUIRE PART No.	MEISSNER PART No.	
52	Loop Ant.	.2Ω	1.3Ω			
53	Osc. Coil		6.2Ω	A28145	14-1040	
54	Input IF	24Ω	24Ω	A28135-2	16-6658	
55	Output IF	20Ω	20Ω	A28136-2	16-6660	

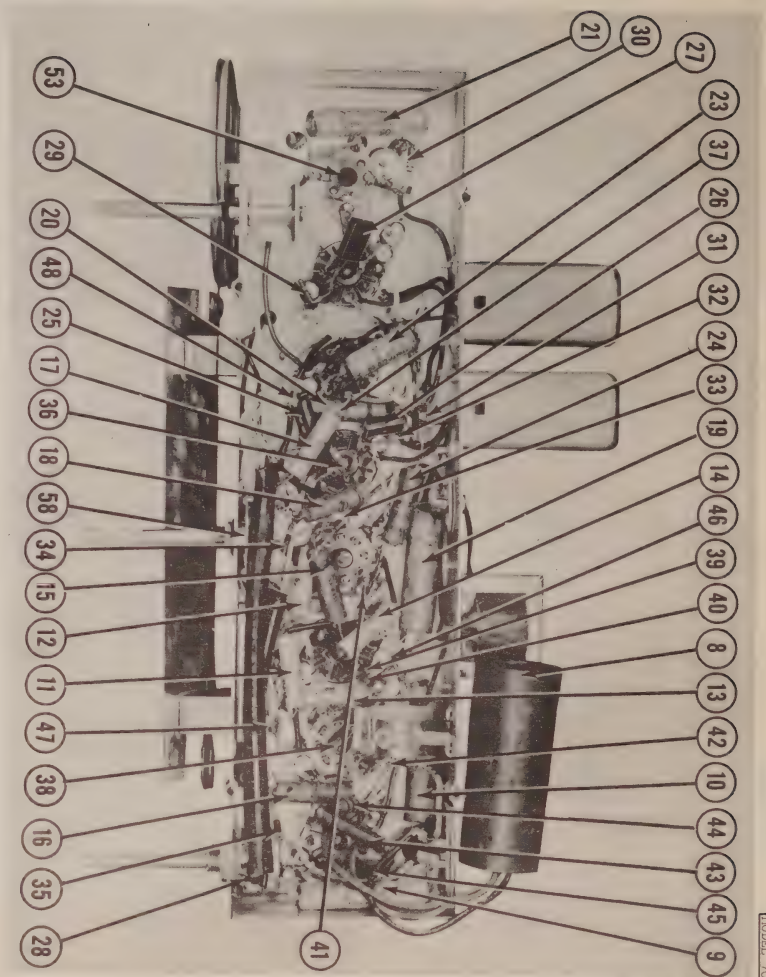
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MAGUIRE PART No.		
56	Bayonet	6-8	0.15	Brown			Type 47
57	"	6-8	0.15	"			" "

MISCELLANEOUS

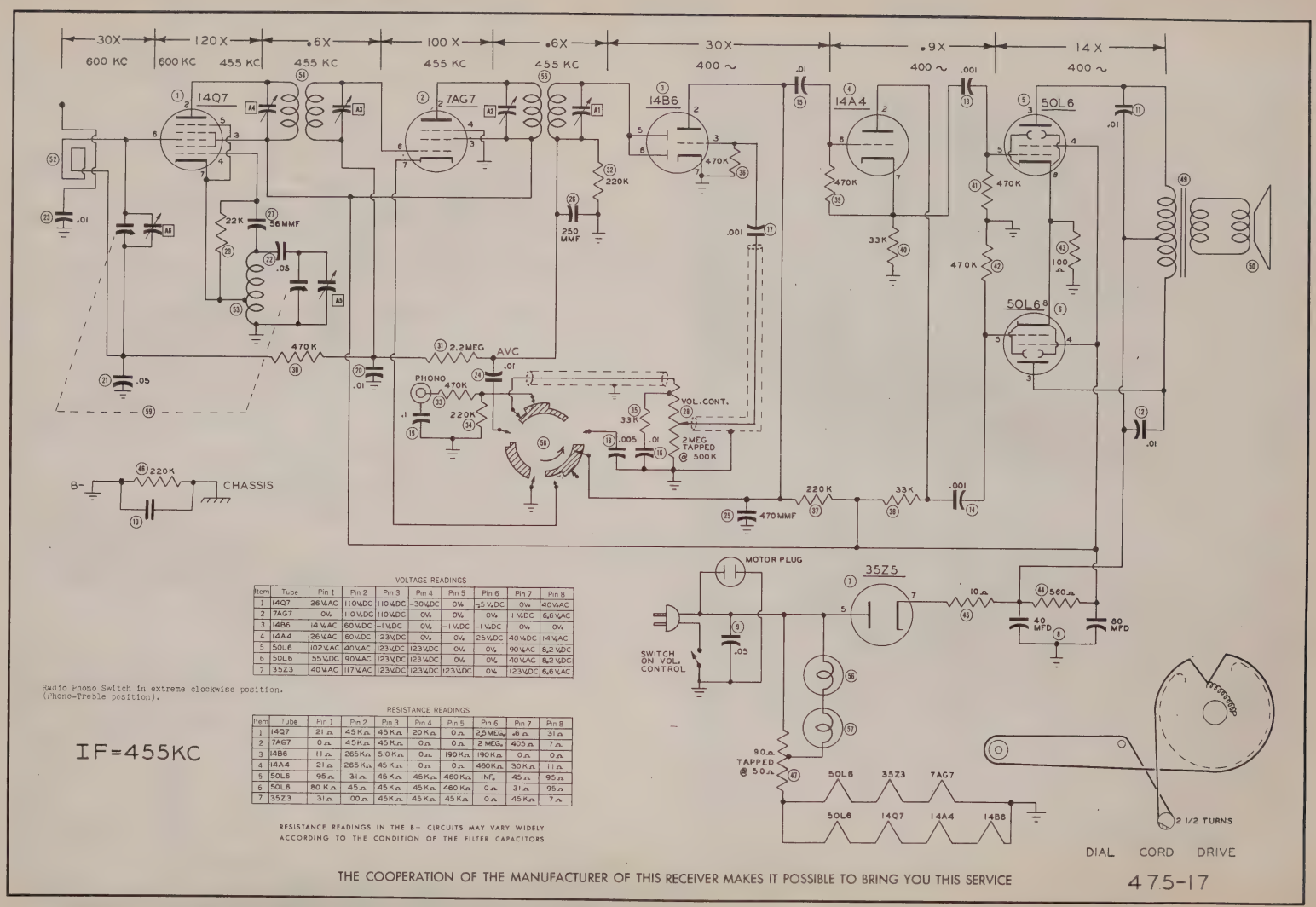
ITEM No.	PART NAME	MAGUIRE PART No.	NOTES
58	Switch		Radio-Phono-Tone
59	2-Gang Var. Cap.	D10419-3	(27-465 MMF, 34-204 MMF)
	Trimmer	A28135-2	(2 Used) Input IF Trans.
	"	A28136-2	(2 Used) Output IF Trans.

CHASSIS—BOTTOM VIEW



MAGUIRE MODEL 700-E

MAGUIRE MODEL 700-E



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	26 VAC	110 VDC	110 VDC	-30 VDC	0 V	±5 VDC	0 V	40 VAC
2	7AG7	0 V	110 VDC	110 VDC	0 V	0 V	0 V	1 VDC	6.6 VAC
3	14B6	14 VAC	60 VDC	-1 VDC	0 V	-1 VDC	-1 VDC	0 V	0 V
4	14A4	26 VAC	60 VDC	123 VDC	0 V	0 V	25 VDC	40 VDC	14 VAC
5	50L6	102 VAC	40 VAC	123 VDC	123 VDC	0 V	0 V	90 VAC	8.2 VDC
6	50L6	55 VDC	90 VAC	123 VDC	123 VDC	0 V	0 V	40 VAC	8.2 VDC
7	35Z3	40 VAC	117 VAC	123 VDC	123 VDC	123 VDC	0 V	123 VDC	6.6 VAC

Radio Phono Switch in extreme clockwise position. (Phono-Treble position).

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	21 Ω	45 KΩ	45 KΩ	20 KΩ	0 Ω	2.5 MEG.	6 Ω	31 Ω
2	7AG7	0 Ω	45 KΩ	45 KΩ	0 Ω	0 Ω	2 MEG.	405 Ω	7 Ω
3	14B6	11 Ω	265 KΩ	510 KΩ	0 Ω	190 KΩ	190 KΩ	0 Ω	0 Ω
4	14A4	21 Ω	265 KΩ	45 KΩ	0 Ω	0 Ω	460 KΩ	30 KΩ	11 Ω
5	50L6	95 Ω	31 Ω	45 KΩ	45 KΩ	460 KΩ	INF.	45 Ω	95 Ω
6	50L6	80 KΩ	45 Ω	45 KΩ	45 KΩ	460 KΩ	0 Ω	31 Ω	95 Ω
7	35Z3	31 Ω	100 Ω	45 KΩ	45 KΩ	45 KΩ	0 Ω	45 KΩ	7 Ω

RESISTANCE READINGS IN THE B- CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

IF=455KC

DIAL CORD DRIVE

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

475-17

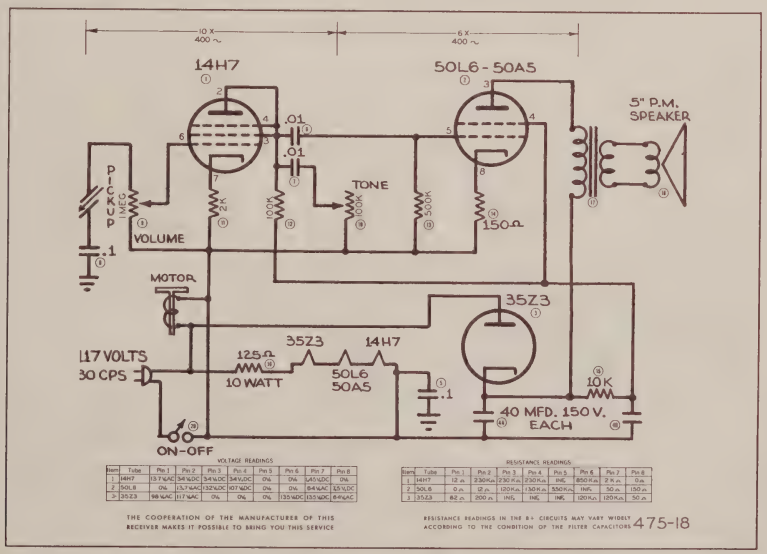
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

MASCO
MODEL MRC-5

MASCO MODEL MRC-5

TRADE NAME	Masco, Model MRC-5
MANUFACTURER	Mark Simpson Co., 32-28 49th St., Long Island City, N.Y.
TYPE SET	AC Operated Automatic Phonograph with 3-Tube Amplifier & Speaker
TUBES (THREE)	Types, 14H7 AF Amp., 50L6 or 50A5 Power Output, 35Z3 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .235 Amp. @ 117 Volts AC



1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	14H7	14H7	9V	
2	Power Output	50L6	50L6	7AC	50A5 Alternate
3	Rectifier	35Z3	35Z3	4Z	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MASCO PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	40	150		TA-440	PRSA150-40-40	BRD4415	2N511	DSB-2x40-150	Filter - Red
B	40	150							" - "
5	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	Line Isolation
6	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
7	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
8	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	Phono Isolation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
9A	1 Meg.	1		UM159	D11-137	M-61-S	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 9A per instructions.
10A	100KΩ	1		MR39	D13-128	M-51-Z	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 10A per instructions.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	IDENTIFICATION CODES
11	2000Ω	½		BTS-2200	Red-Blk.-Red AF Cathode
12	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AF Plate Load-See Note 1
13	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid-See Note 2
14	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
15	10KΩ	½		BTS-10K	Br.-Blk.-Or. Filter
16	125Ω	10		ABA-150	Line Dropping-See Note 3

Note 1 - Some models use 50KΩ in this application.
Note 2 - Some models use 250KΩ in this application.
Note 3 - On IRC replacement set slider @ 125Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MASCO PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
17	1850Ω	2.5Ω	110Ω	.5Ω		A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

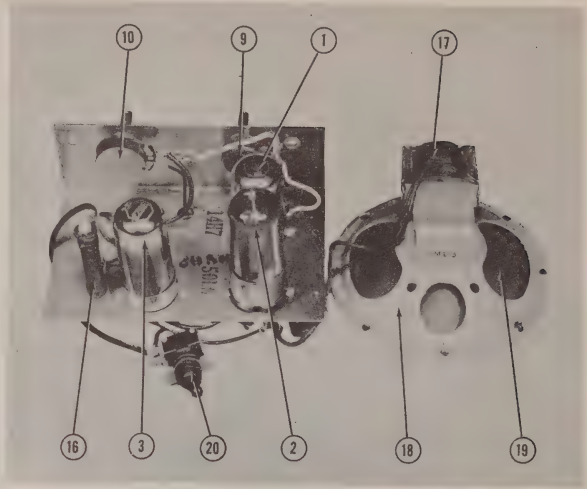
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: MASCO PART No.	JENSEN PART No.		INSTALLATION NOTES
18	FIELD	VC IMP.		ST-106		
	PM	2.9		Mod. P5-W		
19	CONE DIA.	VC DIA.	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		
	4-3/4"	1/2"				

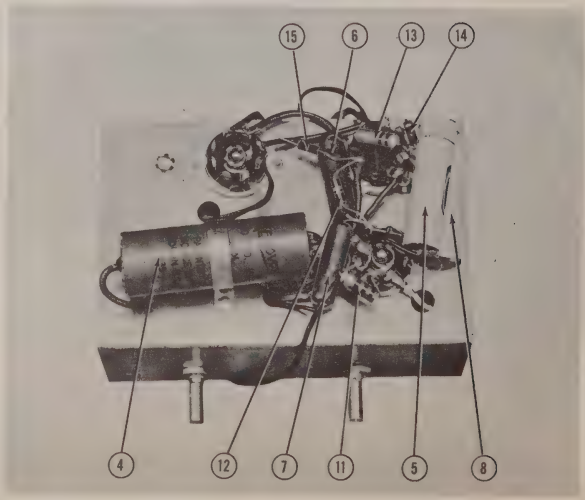
MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
20	On-Off Switch		SPST Toggle

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



TRADE NAME	Midwest, Series 8 - Models S-8, ST-8, TM-8 (Chassis STM-8)
MANUFACTURER	Midwest Radio Corp., 909 Broadway, Cincinnati 2, Ohio
TYPE SET	AC Operated Multi-Band Superheterodyne with Phonograph Provisions and Loop Ant.
TUBES (EIGHT)	Types, 6SK7GT/G RF Amp., 6SA7GT/G Converter, 6SK7GT/G IF Amp., 6J5GT/G Det.-AVC, 6E5 Tuning Eye, 6SJ7GT/G AF Amp., 6K6GT/G Power Output, 6X5GT/G Rectifier.
POWER SUPPLY	105-125 Volts AC
RATING	.720 Amp. @ 117 Volts AC
TUNING RANGE -	BAND A 140-440KC, BAND B 540-1650KC, BAND C 1.6-4.8MC, BAND D 4.8-10.8MC, BAND E 10.8-22.5MC.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume should be at maximum. Output of signal generator should be no higher than is necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to grid 6SA7 (Pin 8). Low side to chassis.	456KC	B	1000KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
200MMFD in series with 400Ω	High side to "A" on ant. terminal strip. Low side to chassis.	400KC	A	400KC	"	A5	" " " "
"	"	"	"	Tune for maximum output.	"	A6,A7.	Rock variable and adjust for maximum output.
"	"	150KC	"	150KC	"	A8	Adjust for maximum output.
"	"	"	"	Tune for maximum output.	"	A9,A10	Rock variable and adjust for maximum output. Repeat last four steps until no further improvement can be made.
"	"	1600KC	B	1600KC	"	A11	Adjust for maximum output.
"	"	"	"	Tune for maximum output.	"	A12, A13	" " " "
"	"	550KC	"	550KC	"	A14	" " " "
"	"	"	"	Tune for maximum output.	"	A15	Rock variable and adjust for maximum output. Repeat last four steps until no further improvement can be made.
"	"	4.7MC	C	4.7MC	Across voice coil	A16	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A17,A18	Rock variable and adjust for maximum output.
"	"	1.6MC	"	1.6MC	"	A19	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A20,A21	Rock variable and adjust for maximum output. Repeat last four steps until no further improvement can be made.
"	"	10MC	D	10MC	"	A22	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A23,A24	Rock variable and adjust for maximum output.
"	"	5MC	"	5MC	"	A25	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A26,A27	Rock variable and adjust for maximum output. Repeat last four steps until no further improvement can be made.
"	"	22MC	E	22MC	"	A28	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A29,A30	Rock variable and adjust for maximum output.
"	"	11.5MC	"	11.5MC	"	A31	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A32,A33	Rock variable and adjust for maximum output. Repeat last four steps until no further increase can be made.

MIDWEST
MODELS S8, ST-8, TM-8 (CH. STM-8)

MIDWEST
MODELS S8, ST-8, TM-8 (CH. STM-8)

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MIDWEST PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7GT/G	6SK7GT/G	8N	
2	Converter	6SA7GT/G	6SA7GT/G	8R	
3	IF Amp.	6SK7GT/G	6SK7GT/G	8N	
4	Det.-AVC	6J5GT/G	6J5GT/G	6Q	
5	Tuning Eye	6E5	6E5	6R	
6	AF Amp.	6SJ7GT/G	6SJ7GT/G	8N	
7	Power Output	6K6GT/G	6K6GT/G	7S	
8	Rectifier	6X5GT/G	6X5GT/G	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

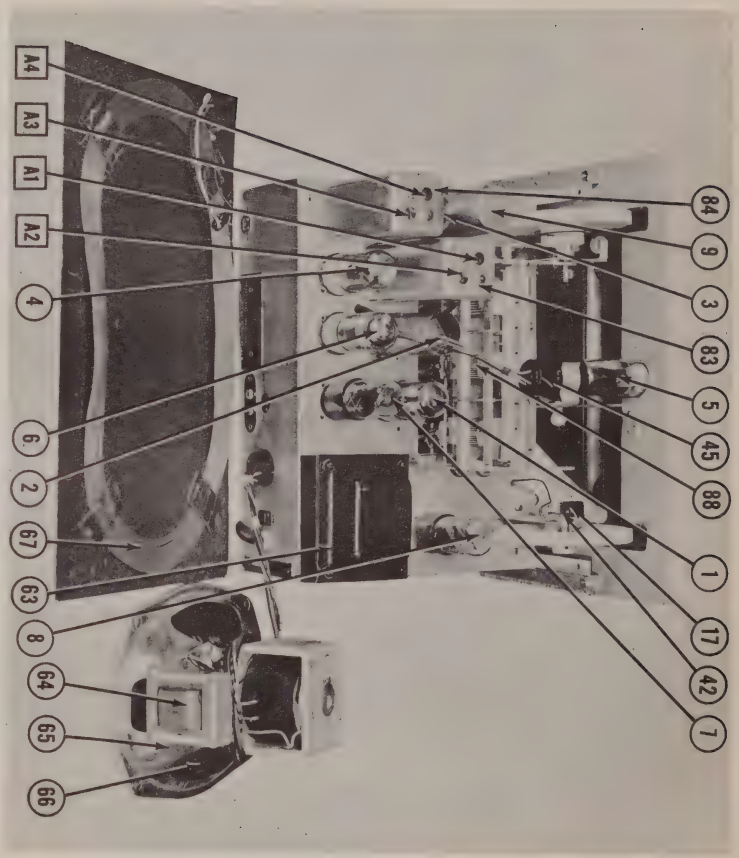
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MIDWEST PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	30	450		‡BL-330	‡AF444J4A†	‡JP9DJ56†	‡FP346	‡DY-315	◓ Filter
B	25	450							■ "
C	25	450							▲ Cath. Bypass
10	40	25		TA-50	PRS25-50	BR502	TC-29	M-50-25	Cath. Bypass
11	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	Line Bypass
12	.02	200		TC-12	484-02	DT4S2	TP423	S-4-02	Tone Compensation
13	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	" "
14	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	" "
15	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	Audio Coupling
16	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	Audio Screen Bypass
17	.01	200		TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
18	.01	200		TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
19	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	IF Screen Bypass
20	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	RF Bypass Pwr. Supp.
21	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	Conv. Screen Bypass
22	.01	800		TC-11	684-01	DT6S1	TP410	S-6-01	RF Screen Bypass
23	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
24	510	500		1FM-35	1468-0005	5W5T5	MC245	MO.5-35	Output Grid Bypass
25	50	500		1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	Tone Compensation Cer.
26	75	500		1FM-475	1469-000075		MCB230		Fixed Padder
27	1050	300							" "
28	75	500		1FM-475	1468-000075		MC230		Fixed Trimmer
29	300	500		MS-33	1469-0003	5R5T3	MCB241	MOS.5-33	Fixed Padder
30	4100	300		1FM-24	1467-004	1D5D4	MC463	MW.5-24	" "
31	51	500		1FM-45	1469-00005	5R5Q5	MCB225	MOS.5-45	Fixed Trimmer
32	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Oso. Grid Capacitor Cer.
33	150	500		1FM-315	1468-00015	5W5T15	MC236	MO.5-315	Fixed Trimmer
34	100	500		MS-31	1469-0001	5R5T1	MCB235	MO.5-31	Fixed Padder
35	91	500							" "
36	50	500		1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	RF Coupling Cer.
37	200	500		1FM-32	1468-0002	5W5T2	MC237	MO.5-32	" "
38	50	500		1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	Fixed Trimmer Cer.
39	130	500							" "
40	91	500							" "

‡Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MIDWEST PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
41A	75KΩ	1	RV-2	UM137		AM-47-S	Tone Control
B	Shaft		Not Req.	S825		KSS-3	Attach to 41A per instructions
C	Switch		" "	M26		SW-A	" " " " "
42A	500KΩ	1	RV-3	TM233	D18-133X	T-88	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 42A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MIDWEST PART No.	IRC PART No.	
43	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. RF Grid
44	18KΩ	1		BTA-18K	Br.-Gray-Or. RF Screen Dropping
45	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Tuning Eye Plate Load
46	10Ω	½		BW-½-10	Br.-Blk.-Blk. Parasitic Suppressor
47	13KΩ	2		BT-2-12K	Br.-Or.-Or. Converter Screen Dropping
48	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
49	18KΩ	1		BTA-18K	Br.-Gray-Or. 1st IF Screen Dropping
50	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 2nd IF Transformer Primary Shunt
51	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
52	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Audio Voltage Divider
53	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AF Grid
54	10KΩ	½		BTS-10K	Br.-Blk.-Or. Tone Compensation
55	27KΩ	½		BTS-27K	Red-Vi.-Or. Tone Compensation
56	18KΩ	½		BTS-18K	Br.-Gray-Or. Tone Compensation
57	1200Ω	½		BTS-1200	Br.-Red-Red AF Cathode
58	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AF Screen Dropping
59	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
60	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
61	400Ω	3		AB-400	Yl.-Blk.-Br. Output Cathode
62	27KΩ	½		BTS-27K	Red-Vi.-Or. Output Transformer Shunt

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MIDWEST PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
63A	117V AC @ .72A	670V CT @ .094A	6.3V AC @ 3.3A		TP-1	P-8013	T22R05	
B					TP-2			Alternate universal power transformer.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MIDWEST PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
64	6800Ω	3.8Ω	41Ω	.35Ω	Part of SP-1B	A-3852	T22S47		

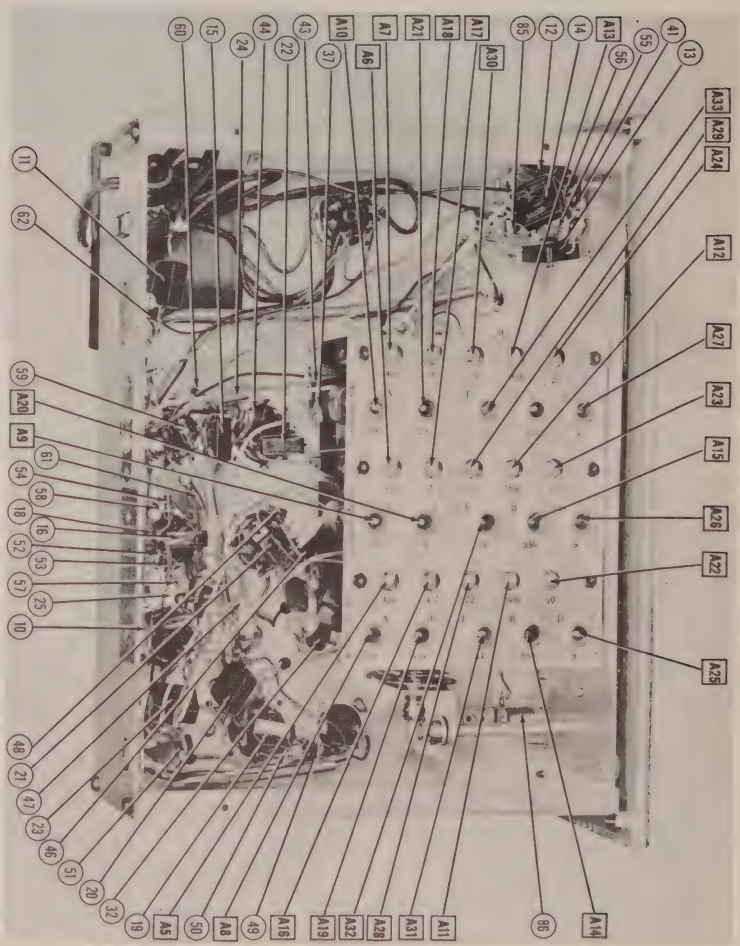
SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA			INSTALLATION NOTES
		MIDWEST PART No.	JENSEN PART No.		
	FIELD RES. / VC IMP.				
65	1500Ω / 3.8Ω	SP-1B			
	CONE DIA. / VC DIA.				
66	6-3/16" x 9" / 3/4"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MIDWEST PART No.	MEISSNER PART No.	
67	Loop Ant. (Band)	.1Ω	1.5Ω			
68	Ant. Coil A	145Ω	46Ω			
69	" " B		8Ω			
70	" " C	.6Ω	.6Ω	UK-1		
71	" " D	.4Ω	.1Ω			
72	" " E	.2Ω	0Ω			
73	RF " A	145Ω	47Ω			
74	" " B	95Ω	3Ω			
75	" " C	.6Ω	.6Ω	UK-2		
76	" " D	.4Ω	0Ω			
77	" " E	.1Ω	0Ω			

CHASSIS—BOTTOM VIEW



NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN "B" SWITCH POSITION.

VOLTAGE READINGS

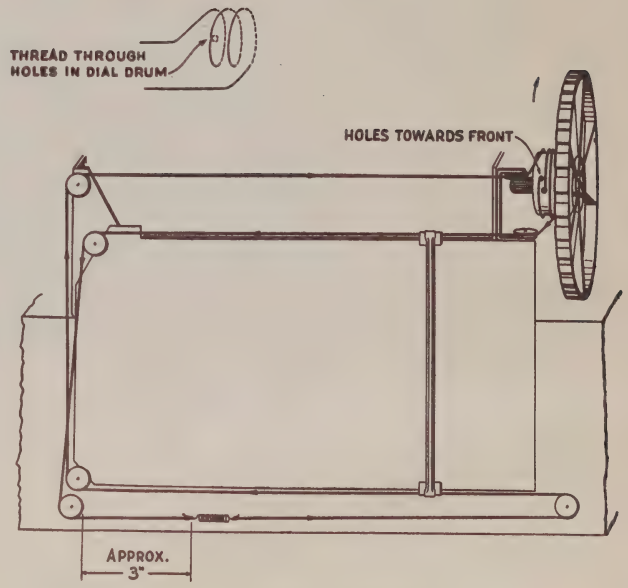
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT/G	0V.	6.3V.AC	0V.	-1 V.DC	0V.	135V.DC	0V.	225V.DC
2	6SA7GT/G	0V.	6.3V.AC	225V.DC	95V.DC	-6.5V.DC	0V.	0V.	-4V.DC
3	6SK7GT/G	0V.	6.3V.AC	0V.	-4V.DC	0V.	135V.DC	0V.	215V.DC
4	6J5GT/G	0V.	6.3V.AC	0V.	0V.	-3 V.DC	0V.	0V.	0V.
6	6SJ7GT/G	0V.	6.3V.AC	.5 V.DC	-.15V.DC	.5 V.DC	17 V.DC	0V.	75V.DC
7	6K6GT/G	0V.	6.3V.AC	215V.DC	225V.DC	0V.	75V.DC	0V.	14V.DC
8	6X5GT/G	0V.	6.3V.AC	335V.AC	0V.	335V.AC	0V.	0V.	380V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT/G	0Ω	.2Ω	0Ω	5 MEG.	0Ω	198KΩ	0Ω	180KΩ
2	6SA7GT/G	0Ω	.2Ω	180KΩ	193KΩ	20KΩ	.5Ω	0Ω	3.4 MEG.
3	6SK7GT/G	0Ω	.2Ω	0Ω	3.4 MEG.	0Ω	198KΩ	0Ω	180KΩ
4	6J5GT/G	0Ω	.2Ω	0Ω	INF.	430KΩ	INF.	0Ω	0Ω
6	6SJ7GT/G	0Ω	.2Ω	1000Ω	850KΩ	1000Ω	2.4 MEG.	0Ω	650KΩ
7	6K6GT/G	0Ω	.2Ω	180KΩ	180KΩ	460KΩ	650KΩ	0Ω	375Ω
8	6X5GT/G	INF	.2Ω	150Ω	INF.	160Ω	INF.	0Ω	180KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



Series 8 Dial Stringing

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

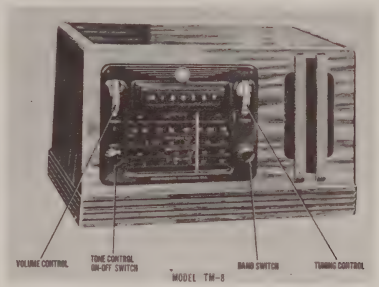
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MIDWEST PART No.	REPLACEMENT DATA MEISSNER PART No.
78	Osc. " A	1.2Ω	2Ω	UK-3	
79	" " B	.8Ω	7Ω		
80	" " C	.5Ω	.7Ω		
81	" " D	.3Ω	.1Ω		
82	" " E		0Ω		
83	Input IF		10.5Ω		
84	Output IF				

DIAL LIGHT

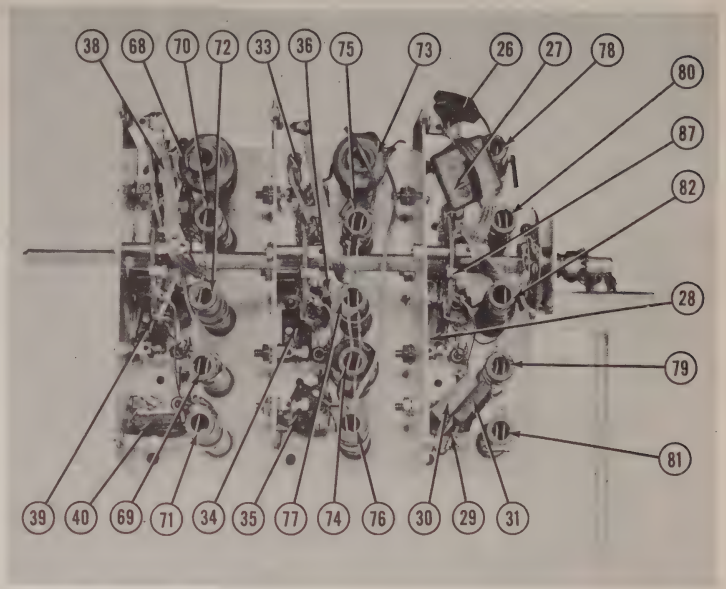
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA MIDWEST PART No.		INSTALLATION NOTES
85	Screw	6.3V	0.25A	Brown	IL-1		Type 46
86	"	6.3V	0.25A	"	IL-1		"

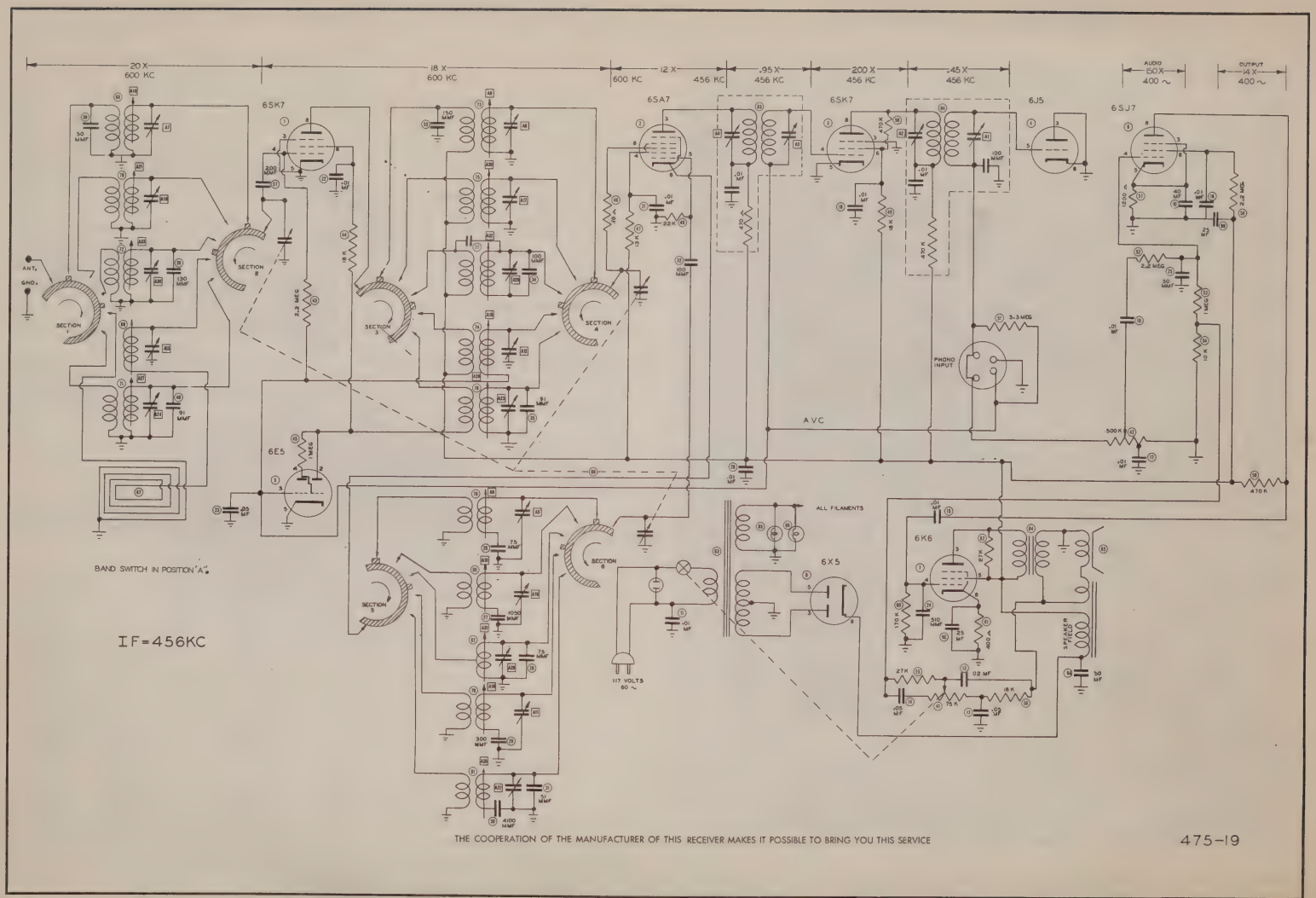
MISCELLANEOUS

ITEM No.	PART NAME	MIDWEST PART No.	NOTES
87	Bandswitch		
88	3 Gang Var. Cap.	CV-2-1	(9-504 MMF, 9-504MMF, 12-359 MMF)
	Dial	AD-2	
	Escutcheon	AE-2	
	Pointer	AP-6	



CHASSIS—BOTTOM VIEW





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475-19

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

MUSITRON MODEL PT-10

TRADE NAME	Musitron, Model PT-10
MANUFACTURER	The Musitron Co., 223 W. Erie St., Chicago 10, Ill.
TYPE SET	AC Operated Phonograph with 4 Tube Amplifier & Speaker
TUBES (FOUR)	Types, 7N7 AF Amp.-Phase Inv. (2) 7C5 Power Output, 7Z4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .580 Amp. @ 117 Volts AC

Pin	7N7		7C5	
No.	Volt.	Res	Volt	Res.
1	3.1 V.AC	.2 Ω	3.1 V.AC	.2 Ω
2	3.9 V.DC	860 Ω	325 V.DC	45 K Ω
3	100 V.DC	120 K Ω	310 V.DC	45 K Ω
4	0V.	450 K Ω	0V.	INF.
5	0V.	13 K Ω	0V.	INF.
6	100 V.DC	125 K Ω	0V.	260 K Ω
7	3.9 V.DC	860 Ω	18 V.DC	195 Ω
8	3.1 V.AC	.2 Ω	3.1 V.AC	.2 Ω

Pin	7C5		7Z4	
No.	Volt.	Res	Volt	Res.
1	3.1 V.AC	.2 Ω	3.1 V.AC	.2 Ω
2	325 V.DC	45 K Ω	0V.	INF.
3	310 V.DC	45 K Ω	300 V.AC	139 Ω
4	0V.	INF.	0V.	INF.
5	0V.	INF.	0V.	INF.
6	0V.	235 K Ω	300 V.AC	130 Ω
7	18 V.DC	195 Ω	330 V.DC	45 K Ω
8	3.1 V.AC	.2 Ω	3.1 V.AC	.2 Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE MODEL 6971 (Ch. 132.826-1)

TUBES

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT/G	12SK7GT/G	8N	
2	Converter	12SA7GT/G	12SA7GT/G	8AD	
3	IF Amp.	12SK7GT/G	12SK7GT/G	8N	
4	Det.-AVC-AF	12SQ7GT/G	12SQ7GT/G	8Q	
5	Power Output	35L6GT/G	35L6GT/G	7AC	
6	Rectifier	35Z5GT/G	35Z5GT/G	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	N19239	EL-24	AF84D4A‡	UP4215	FP3061‡	DY-4020-150	■ Filter
B	20	150							▲ "
8	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
9	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
10	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Hum Neutralization
11	.005	600		TC-25	584-005	DT6D5	TP408	S-6-005	Audio Coupling
12	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	" "
13	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
14	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
15	.03	400		TC-13	484-03	DT4S3	TP424	S-6-03	Ant. Isolation
16	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Audio Plate Bypass
17	250	500		1FM-325	1468-00025	5W5T25	MC240	MO.5-325	IF Bypass Vol. Cont.
18	2000	300		1FM-22	1467-002	1W5D2	MC457	MW.5-22	Tone Compensation
19	100	500		1FM-31	1468-0001	5w5T1	MC235	MO.5-31	Osc. Grid Capacitor

‡Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
20A	500KΩ	1	N19529	MR43	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 20A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

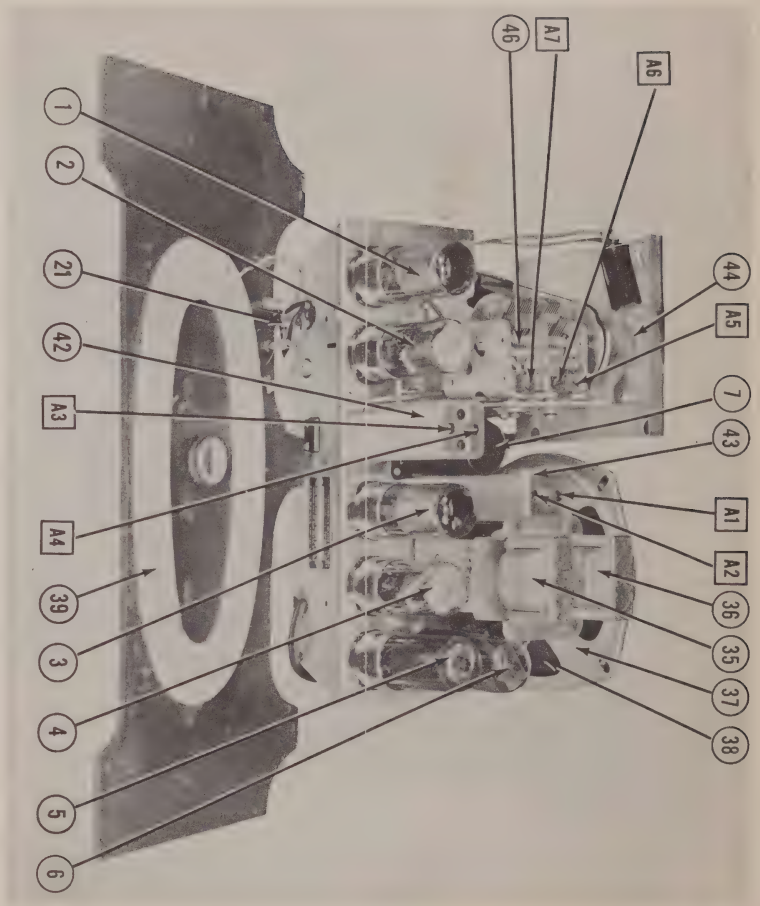
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
21	10KΩ	‡		BTS-10K	Br.-Blk.-Or. Antenna Coil Shunt
22	330KΩ	‡		BTS-330K	Or.-Or.-Yl. Line Isolation
23	2.2 Meg.	‡		BTS-2.2 Meg.	Red-Red-Grn. Series Phono
24	3300Ω	‡		BTS-3300	Or.-Or.-Red Parasitic Suppressor
25	22KΩ	‡		BTS-22K	Red-Red-Or. Oscillator Grid
26	6.8 Meg.	‡		BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
27	68KΩ	‡		BTS-68K	Blue-Gray-Or. Tone Compensation
28	2.2 Meg.	‡		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
29	6.8 Meg.	‡		BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
30	470KΩ	‡		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
31	470KΩ	‡		BTS-470K	Yl.-Vi.-Yl. Output Grid
32	150Ω	‡		Bw-½-150	Br.-Grn.-Br. Output Cathode
33	12KΩ	1		BTA-12K	Br.-Red-Or. Bias Bleeder
34	15Ω	‡		Bw-½-15	Br.-Grn.-Blk. Surge Limiter

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: SILVERTONE PART NO.	STANCOR PART NO.	THORDARSON PART NO.	INSTALLATION NOTES
35	.041A	215Ω	8.5 Henries	N18583	C-1723	T20C52*	*Cut bracket and spread to mount replacement.

CHASSIS--TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
36	2050Ω	2.5Ω	113Ω	.38Ω	N18882	A-5876	T22845		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-1071		†Fabricate new mounting bracket.
37	PM	3.05Ω	N18550	Mod. P5-V	†	
	CONE DIA.	VC DIA.				
38	5-5/32"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

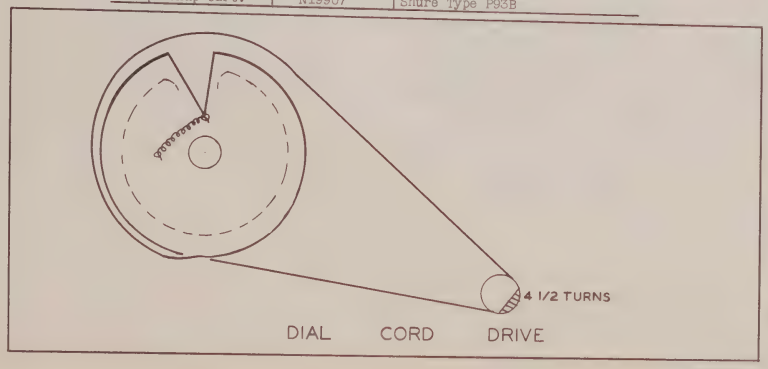
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
39	Loop Ant.	13Ω	.8Ω	N19558		
40	RF Coil	4.5Ω	9.5Ω	N19860		
41	Osc. Coil	1Ω	10.5Ω	N18580	14-1040	
42	Input IF	16.5Ω	16.5Ω	N21009	16-6666	
43	Output IF	12.5Ω		N18578		

DIAL LIGHT

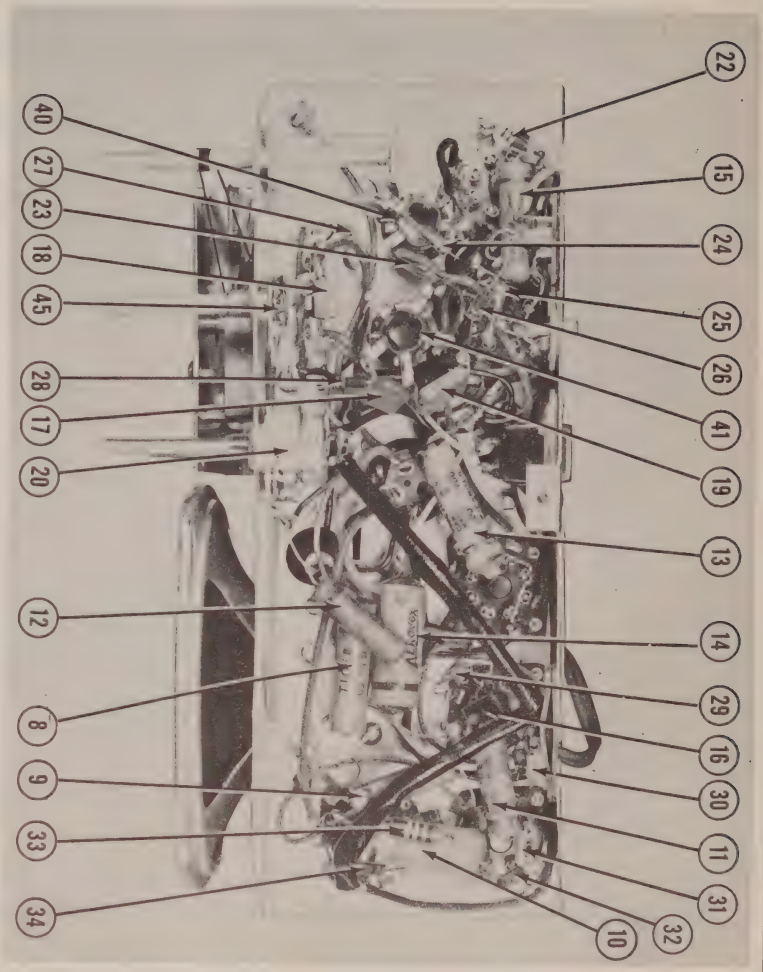
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SILVERTONE PART No.		
44	Screw	120	.05				Type C7

MISCELLANEOUS

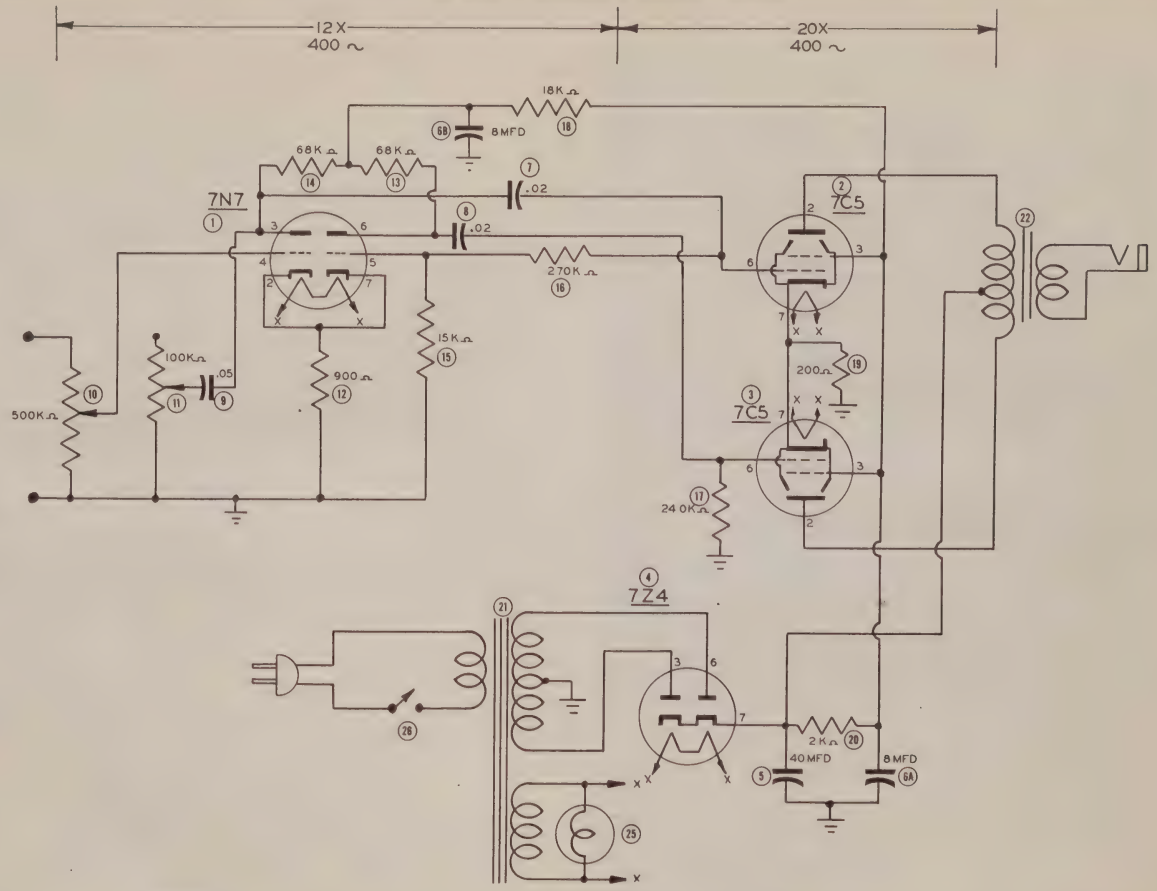
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
45	Switch	N19546	Phono-Radio-Tone
46	3 Gang Var. Cap.	N18564	(38-514MMF, 18-253MMF, 13-92MMF)
	Switch	N19545	Phono-Motor
	Dial Scale	N19533	
	Dial Pointer	N19226	
	Phono Motor	N19475	With 9" turntable
	Pickup Cart.	N19907	Shure Type P93B



CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 5071 (Ch. 122.826-1)



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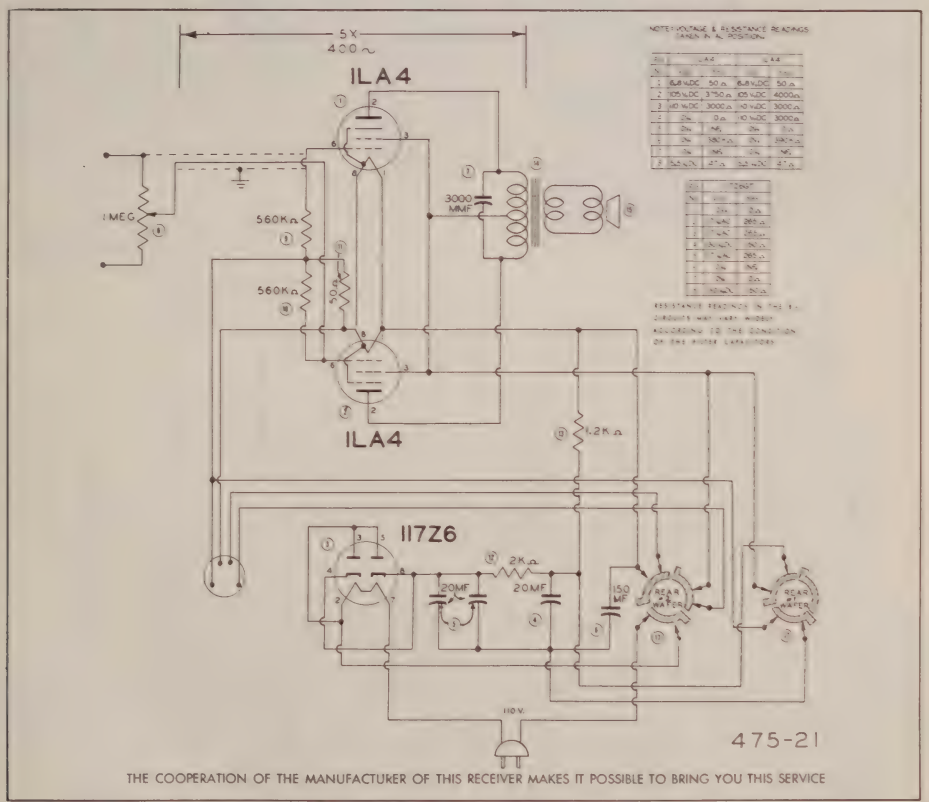
MUSITRON
MODEL PICCOLO 103

MUSITRON MODEL 103

TRADE NAME	Musitron, Model "Piccolo" 103
MANUFACTURER	The Musitron Co., 223 W. Erie St., Chicago 10, Ill.
TYPE SET	AC Batt. Operated Portable Phonograph with Amplifier and Speaker.
TUBES (THREE)	Types, (2) 1LA4 Power Output, 117Z6GT Rectifier.
POWER SUPPLY RATING	110-120 Volts AC or 1½ Volt "A" Battery & 90 Volt "B" Battery .290 Amp. @ 117 Volts AC or 104MA @ 1.6 Volts DC & 18 MA @ 93 Volts DC



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MUSITRON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	1LA4	1LA4	5AD	
2	"	1LA4	1LA4	5AD	
3	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MUSITRON PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4	20	150		UT-201	PRS150-20	BR2015	T045	M-20-150	Filter
5A	20	150		TA-220	PRSA150-20-	BRD2215	2N509	DSB-2x20-150	"
B	20	150			20				"
6	150	25		UHC-102	PRS25-100†	BRH251	TC2501	DGM-250-25	Filament Bypass
7	300	300		1FM-23	1467-003	1W5D3	MC461	MW.5-23	Output Plate Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MUSITRON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
8A	1 Meg.	1		UM159	D11-137	M-61-S	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 8A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MUSITRON PART No.	IRC PART No.	IDENTIFICATION CODES
9	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Output Grid
10	560KΩ	½		BTS-560K	Grn.-Blue-Yl. " "
11	50Ω	5		AB-50	Bias
12	2000Ω	10		AB-2000	Filter
13	1200Ω	10		AB-1250	Filament String

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MUSITRON PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
14	17000 Ω CT	3.1Ω	1750Ω CT	.45Ω		A-3496	T22548		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: MUSITRON PART No.	JENSEN PART No.		INSTALLATION NOTES
15	FIELD	VC IMP.		ST-113		
	PM	3.1Ω		Mod. P4-X		
16	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	4"	1/2"				

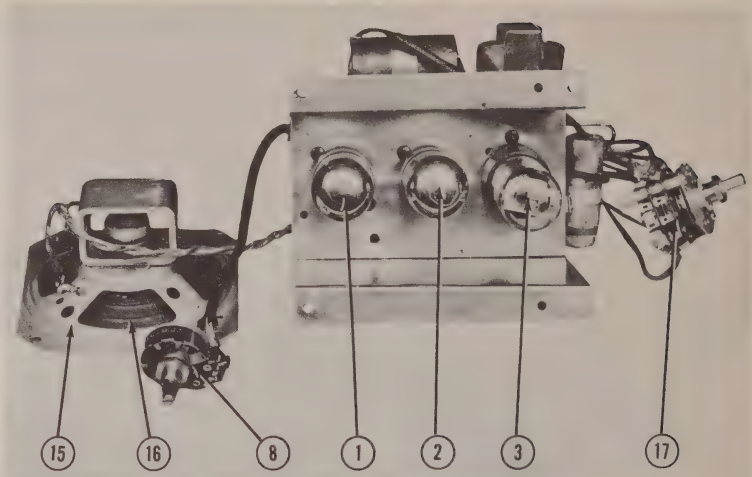
MISCELLANEOUS

ITEM No.	PART NAME	MUSITRON PART No.	NOTES
17	Switch		Power Change-Over

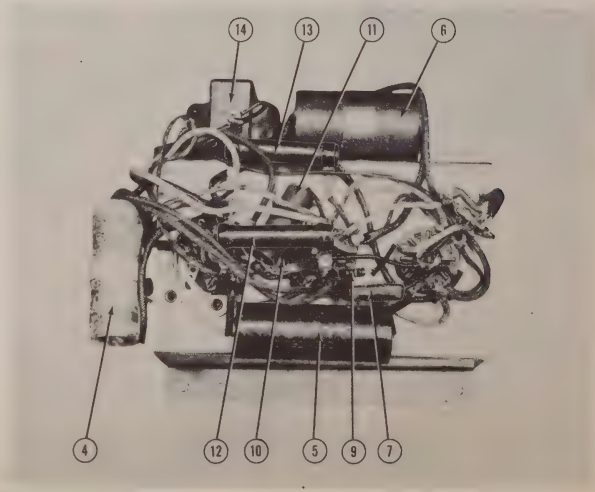
DISASSEMBLY INSTRUCTIONS

1. Remove the eight wood screws and washers holding the turntable board to cabinet.
2. Remove turntable board from cabinet.
3. Remove battery power pack from cabinet.
4. Remove four wood screws and washers holding speaker to cabinet. Remove speaker.

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



NEWCOMB MODEL H-14

TRADE NAME	Newcomb, Model H-14
MANUFACTURER	Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles, Calif.
TYPE SET	AC Operated Three Channel Audio Amplifier
TUBES (SIX)	Types, 6SC7 Mike Amp., 6SJ7 Audio Amp., 6J5 Phase Inverter, (2) 6V6GT/G Power Output, 5Y3GT/G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .590 Amp. @ 117 Volts AC

NOTE: ALL CONTROLS FULL ON

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SC7	0V.	75V.DC	-.55V.DC	-.5V.DC	85V.DC	0V.	3.1V.AC	3.1V.AC
2	6SJ7	0V.	3.1V.AC	.05V.DC	-.6V.DC	.05V.DC	20V.DC	3.1V.AC	65V. DC
3	6J5	0V.	3.1V.AC	150V.DC	190V.DC	7 V.DC	39V.DC	3.1V.AC	45V.DC
4	6V6GT/G	0V.	3.1V.AC	340V.DC	335V.DC	0V.	190V.DC	3.1V.AC	21V.DC
5	6V6GT/G	0V.	3.1V.AC	340V.DC	335V.DC	0V.	.05V.DC	3.1V.AC	21V.DC
6	5Y3GT/G	0V.	350V.DC	0V.	320V.AC	335V.DC	320V.AC	0V.	350V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SC7	0Ω	670 KΩ	18 MEG.	18 MEG.	670KΩ	0Ω	.2Ω	.2Ω
2	6SJ7	0Ω	.2Ω	103 Ω	10 MEG.	103 Ω	3.7 MEG.	.2Ω	960KΩ
3	6J5	0Ω	.2Ω	500 KΩ	400 KΩ	1.2MEG.	95 KΩ	.2Ω	106KΩ
4	6V6GT/G	0Ω	.2Ω	300 KΩ	300 KΩ	560 KΩ	400 KΩ	.2Ω	250Ω
5	6V6GT/G	0Ω	.2Ω	300 KΩ	300 KΩ	550KΩ	103 Ω	.2Ω	250Ω
6	5Y3GT/G	0Ω	300 KΩ	INF.	135 Ω	300 KΩ	125 Ω	INF.	300KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

NEWCOMB MODEL R-14

TUBES

ITEM No.	USE	REPLACEMENT DATA: NEWCOMB PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mic Amp.	6SC7	6SC7	8S	
2	Audio Amp.	6SJ7	6SJ7	8N	
3	Phase Inv.	6J5	6J5	6Q	
4	Power Output	6V6GT/G	6V6GT/G	7AC	
5	" "	6V6GT/G	6V6GT/G	7AC	
6	Rectifier	5Y3GT/G	5Y3GT/G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NEWCOMB PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	16	475		UT-165		BR165D	2-TC82	M-16-525	Filter
8	8	475		UT-85		BR85D	TC82	M-8-525	"
9	8	475		UT-85		BR85D	TC82	M-8-525	"
10	25	50		TA-525	PRS50-25	BR25S	TC36	M-25-50	Cath. Bypass
11	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	Audio Coupling
12	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	" "
13	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	" "
14	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	6SJ7 Screen Bypass
15	.01	600		TC-11	684-01	DT6S1	TP410	S-6-01	Audio Coupling
16	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Tone Compensation
17	.001	600		TC-21	684-001	DT6D1	TP404	S-6-001	" "
18	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	Audio Coupling
19	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	" "
20	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	Mic. Coupling
21	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	" "
22	.004	600		TC-24	684-004	DT6D4	TP407	S-6-004	Tone Compensation
23	200	500		1FM-32	1468-0002	5W5T2	MC237	M0.5-32	Audio Plate Bypass
24	500	500		1FM-35	1468-0005	5W5T5	MC245	M0.5-35	Audio Coupling

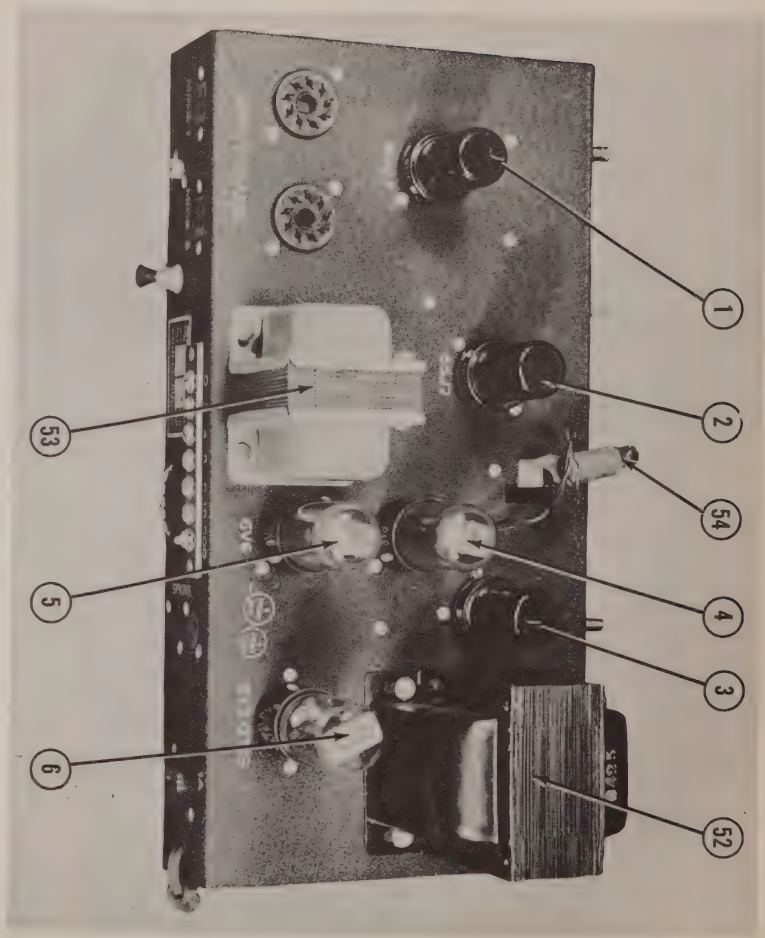
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NEWCOMB PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	2 Meg.	1		MR55			Treble Control (CM1135)
B	Shaft			Not Req.			Attach to 25A per instructions
26A	10 Meg	1			D11-143	M-99-Z	Bass Control (CM1136)
B	Shaft				A	Not Req.	Attach to 26A per instructions
27A	1 Meg	1	RV-42	MRT460	DVC-539X		Phono and Mike 2 Control (CM1140)
B	Shaft		Not Req.	Not Req.	A		Attach to 27A per instructions
28A	500KΩ	1	RV-41	MR48	D13-133	M-60-Z	Mike 1 Control (CM1134)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 28A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NEWCOMB PART No.	IRC PART No.	IDENTIFICATION CODES
29	18 Meg.	½		BTS-18 Meg.	Br.-Gray-Blue 1st Mike Amplifier Grid
30	18 Meg.	½		BTS-18 Meg.	Br.-Gray-Blue 2nd Mike Amplifier Grid
31	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st Mike Amplifier Plate Load
32	270KΩ	½		BTS-270K	Red-Vi.-Yl. 2nd Mike Amplifier Plate Load
33	330KΩ	½		BTS-330K	Or.-Or.-Yl. Isolation
34	330KΩ	½		BTS-330K	Or.-Or.-Yl. "
35	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Tone Compensation
36	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
37	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AF Grid
38	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
39	100Ω	½		BW-½-100	Br.-Blk.-Br. AF Cathode
40	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AF Screen Dropping
41	560KΩ	½		BTS-560K	Grn.-Blue-Yl. AF Plate Load
42	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. Phase Inverter Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NEWCOMB PART No.	IRC PART No.	
43	12KΩ			BTS-12K	Br.-Red-Or. Phase Inverter Cathode
44	100KΩ			BTS-100K	Br.-Blk.-Yl. " " "
45	100KΩ			BTS-100K	Br.-Blk.-Yl. Phase Inverter Plate Load
46	560KΩ			BTS-560K	Grn.-Blue-Yl. Output Grid
47	560KΩ			BTS-560K	Grn.-Blue-Yl. " "
48	250Ω				Output Cathode
49	100KΩ			BTS-100K	Br.-Blk.-Yl. Voltage Dropping
50	2200Ω			BTA-2200	Red-Red-Red Filter
51	56KΩ			BTS-56K	Grn.-Blue-Or. Feedback

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	NEWCOMB PART No.	STANCOR PART No.	THORDARSON PART No.	
52	117V AC @ .59A	640V CT @ .075A	5.0V AC @ 1.9A	6.3V AC @ 1.9A		P-6312†	T22R31*	*Drill new mounting holes. †Use universal mounting brackets.

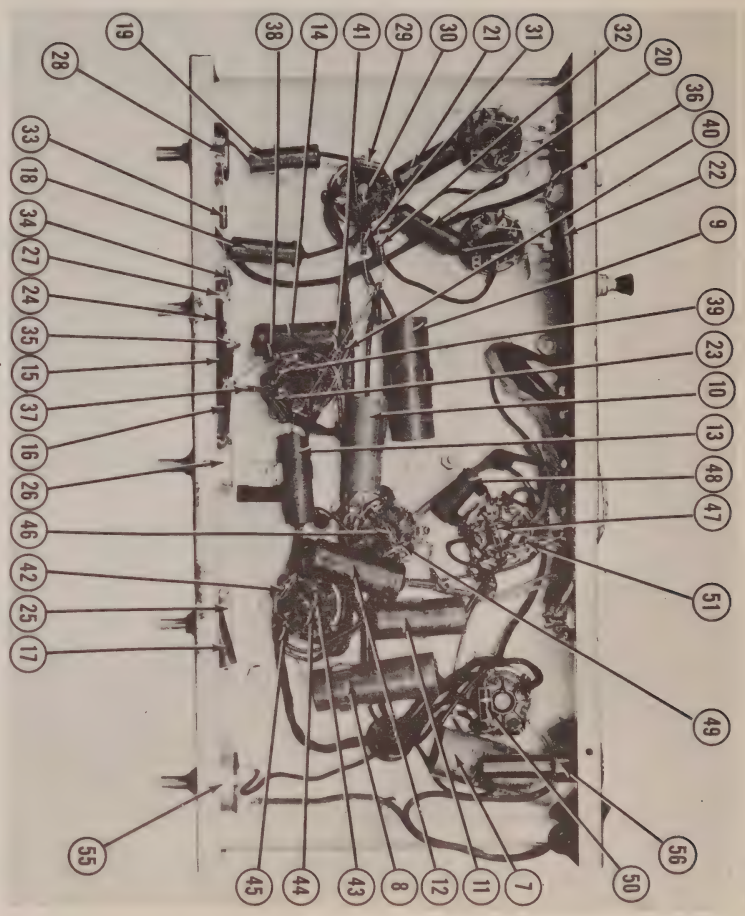
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NEWCOMB PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
53	8700Ω CT	3Ω 4Ω 6Ω 8Ω 16Ω 500Ω	730Ω CT	.9Ω 1.1Ω 1.3Ω 1.6Ω 2.2Ω 40Ω	CS-0459	A-3855*	T22S66		*Drill new mounting holes.

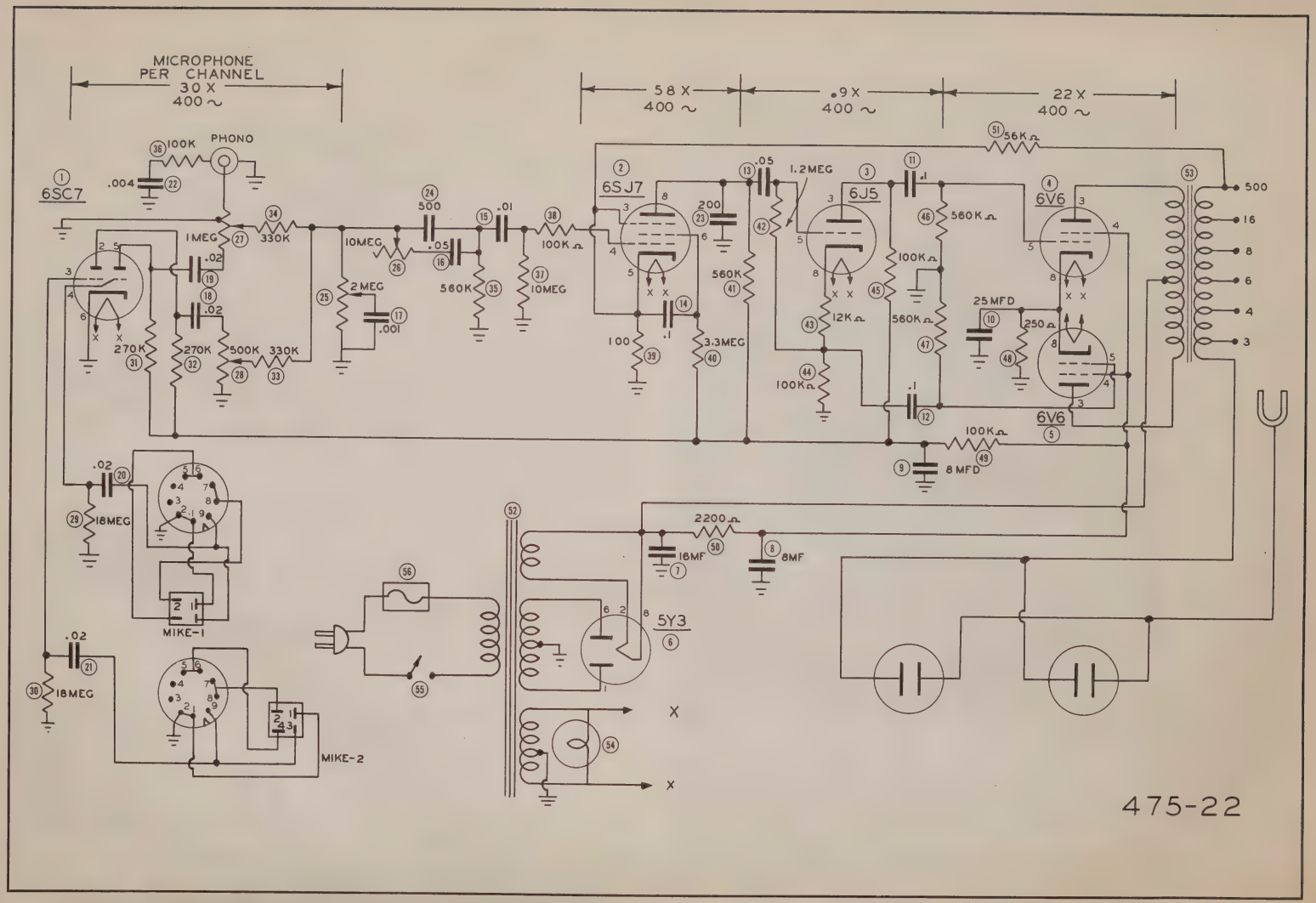
DIAL LIGHT

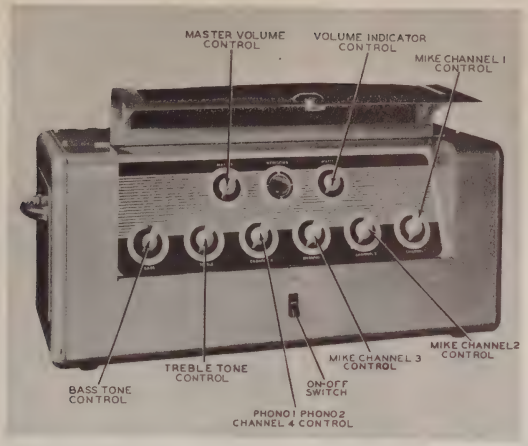
ITEM No.	BASE TYPE	VOLTS	AMPS.	LEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					NEWCOMB PART No.		
54	Bayonet	6-8	0.15	Brown			Type 47

CHASSIS—BOTTOM VIEW



NEWCOMB MODEL H-14


MICROPHONE PER CHANNEL
30 X
400 ~
58 X
400 ~
.9 X
400 ~
22 X
400 ~
6SC7
PHONO
100K
.004
1MEG
330K
.02
270K
500K
10MEG
2 MEG
.001
500
.05
560K
.01
100K
6SJ7
200
1.2MEG
.1
100
3.3MEG
6J5
12K
100K
560K
25 MFD
250
6V6
6V6
56K
500
16
8
6
4
3
8 MFD
.02
18MEG
MIKE-1
MIKE-2
2200
16MF
8MF
5Y3
X
X
475-22



NEWCOMB MODEL KX-30

TRADE NAME	Newcomb, Model KX-30
MANUFACTURER	Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles, Calif.
TYPE SET	AC Operated Five Channel Audio Amplifier
TUBES	(THIRTEEN) Types,(3) 6J7 Mike Amp., 6J7 Audio Amp., 6J5 Tone Boost, 6J5 Driver, 6SQ7 Overload Amp., 6AF6G Vol. & Overload Indicator, 6SN7GT Phase Inv. & Vol. Ind. Amp., (2) 6L6G Power Output, 5V4G Rectifier, 6V6GT Voltage Regulator.
POWER SUPPLY	105-129 Volts AC RATING 1.07 Amp. @ 117 Volts AC

NOTE: ALL CONTROLS MAXIMUM CLOCKWISE.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6J7	0V.	3 V.AC	60 V.DC	30 V.DC	0V.	230 V.DC	3 V.AC	0V.	-55 V.DC
2	6J7	0V.	3 V.AC	55 V.DC	20 V.DC	0V.	230 V.DC	3 V.AC	0V.	-5 V.DC
3	6J7	0V.	3 V.AC	70 V.DC	40 V.DC	0V.	230 V.DC	3 V.AC	0V.	-.2 V.DC
4	6J7	0V.	3 V.AC	115 V.DC	50 V.DC	0V.	230 V.DC	3 V.AC	0V.	-.4 V.DC
5	6J5	0V.	3 V.AC	185 V.DC	80 V.DC	60 V.DC	340 V.DC	3 V.AC	80 V.DC	
6	6J5	0V.	3 V.AC	210 V.DC	0V.	0V.	200 V.DC	3 V.AC	8.4 V.DC	
7	6SQ7	0V.	-.45 V.DC	0V.	-6.4 V.DC	-6.4 V.DC	200 V.DC	3 V.AC	3 V.AC	
9	6SN7	0V.	200 V.DC	8.4 V.DC	-.45 V.DC	200 V.DC	0V.	3 V.AC	3 V.AC	
10	6L6GT	0V.	3 V.AC	400 V.DC	305 V.DC	0V.	400 V.DC	3 V.AC	23 V.DC	
11	6L6GT	0V.	3 V.AC	400 V.DC	305 V.DC	0V.	-8 V.DC	3 V.AC	23 V.DC	
12	5V4G	0V.	420 V.DC	0V.	335 V.AC	255 V.DC	335 V.AC	62 V.DC	420 V.DC	
13	6V6GT	0V.	* 0V.	420 V.DC	420 V.DC	280 V.DC	295 V.DC	* 0V.	300 V.DC	

* 6 V.AC MEASURED ACROSS 2 & 7 ON 6V6GT SOCKET.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6J7	0Ω	.1Ω	380KΩ	1.3MEG.	0Ω	105KΩ	.1Ω	0Ω	10 MEG.
2	6J7	0Ω	.1Ω	380KΩ	1.3MEG.	0Ω	105KΩ	.1Ω	0Ω	10 MEG.
3	6J7	0Ω	.1Ω	380KΩ	1.3MEG.	0Ω	105KΩ	.1Ω	0Ω	10 MEG.
4	6J7	0Ω	.1Ω	205KΩ	725KΩ	0Ω	105KΩ	.1Ω	0Ω	10 MEG.
5	6J5	0Ω	.1Ω	290KΩ	90KΩ	1.1 MEG.	95KΩ	.1Ω	97KΩ	
6	6J5	0Ω	.1Ω	145KΩ	100KΩ	185KΩ	195KΩ	.1Ω	2.4KΩ	
7	6SQ7	0Ω	3 MEG.	0Ω	4 MEG.	4 MEG.	4 MEG.	.1Ω	.1Ω	
9	6SN7	1.2MEG.	145KΩ	2.4KΩ	7 MEG.	195KΩ	0Ω	.1Ω	.1Ω	
10	6L6GT	0Ω	.1Ω	85KΩ	180KΩ	175KΩ	85KΩ	.1Ω	190Ω	
11	6L6GT	0Ω	.1Ω	85KΩ	180KΩ	170KΩ	26KΩ	.1Ω	190Ω	
12	5V4G	0Ω	85KΩ	INF.	82Ω	100KΩ	88Ω	10KΩ	85KΩ	
13	6V6GT	0Ω	INF.	85KΩ	85KΩ	1.3MEG.	180KΩ	INF.	180KΩ	

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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NEWCOMB
MODEL KX-30

NEWCOMB
MODEL KX-30

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: NEWCOMB PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	1st Mic. AF	6J7	6J7	7R	
2	2nd Mic. AF	6J7	6J7	7R	
3	3rd Mic. AF	6J7	6J7	7R	
4	Audio Amp.	6J7	6J7	7R	
5	Tone Boost	6J5	6J5	6Q	
6	Driver	6J5	6J5	6Q	
7	Overload Amp.	6SQ7	6SQ7	8Q	
8	Vol. & Overload Indicator	6AF8G	6AF8G	7AG	
9	Phase Inverter & Vol. Ind. Amp.	6SN7GT	6SN7GT	8BD	
10	Power Output	6L6G	6L6G	7AC	
11	"	6L6G	6L6G	7AC	
12	Rectifier	5V4G	5V4G	5I	
13	Voltage Reg.	6V6GT	6V6GT	7AC	

CAPACITORS

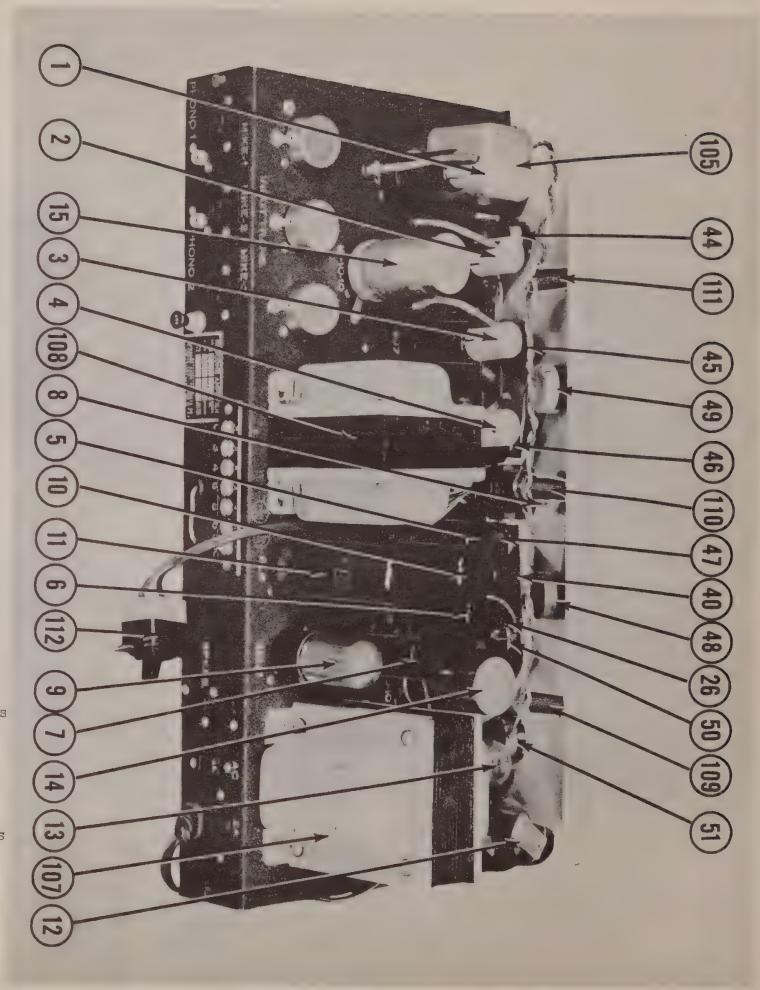
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NEWCOMB PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
14A	10	475	CE-17			3-BR850		DO-3x10-475	Filter
B	10	475						"	"
C	10	475						"	"
15A	10	475	CE-17			3-BR850		DO-3x10-475	"
B	10	475						"	"
C	10	475						"	"
16	25	50		TA-525	PRS50-25	BR255	TC36	M-25-50	Cath. Bypass
17	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	VR Grid Filter
18	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	Vol. Ind. Filter
19	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	Audio Coupling
20	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	" "
21	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Grid Filter
22	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Audio Coupling
23	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Grid Filter
24	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Audio Coupling
25	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Tone Compensation
26	.002	600		TC-22	684-002	DT6D2	TP405	S-6-002	" "
27	.25	600		TC-2	684-.25	DT6P25	TP420	S-6-25	" "
28	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Audio Coupling
29	.25	400		TC-2	484-.25	DT4P25	TP430	S-4-25	Audio Screen Bypass
30	.01	600		TC-11	684-01	DT6S1	TP410	S-6-01	Audio Coupling
31	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	" "
32	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	" "
33	.1	600		TC-1	684-.1	DT6P1	TP418	S-6-1	" "
34	.25	400		TC-2	484-.25	DT4P25	TP430	S-4-25	3rd Mic. AF Screen Bypass
35	.25	400		TC-2	484-.25	DT4P25	TP430	S-4-25	2nd " " " "
36	.25	400		TC-2	484-.25	DT4P25	TP430	S-4-25	1st " " " "
37	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	Mic. Coupling
38	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	" "
39	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	" "
40	.004	600		TC-24	684-004	DT6D4	TP407	S-6-004	Tone Compensation
41	.004	600		TC-24	684-004	DT6D4	TP407	S-6-004	" "
42	500	500		1FM-35	1468-0005	5W5T5	MC245	M0.5-35	Degeneration
43	200	500		1FM-32	1468-0002	5W5T2	MC237	M0.5-32	Tone Boost Cath. Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NEWCOMB PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
44A	500KΩ	1	RV-41	MR48	D13-133	M-60-Z	Mike 1 Control (CM1134)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 44A per instructions
45A	500KΩ	1	RV-41	MR48	D13-133	M-60-Z	Mike 2 Control (CM1134)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 45A per instructions
46A	500KΩ	1	RV-41	MR48	D13-133	M-60-Z	Mike 3 Control (CM1134)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 46A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	NEWCOMB PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
47A	1 Meg.	1	RV-42	MRT460	DVC-539X		Phono 1 & 2 Control (CM1140)
B	Shaft		Not Req.	Not Req.	A		Attach to 47A per instructions
48A	500KΩ	1	RV-41	MR48	D13-133	M-60-Z	Master Volume Control (CM1134)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 48A per instructions
49A	25KΩ	1	RV-37	MR28	D16-120		Volume Indicator Control (CM1137)
B	Shaft		Not Req.	Not Req.	A		Attach to 49A per instructions
50A	1 Meg.	1	RV-38	MRT443	D18-137X	T-112	Treble Control (CM1139)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 50A per instructions
51A	1 Meg.	1	RV-38	MRT443	D18-137X	T-112	Bass Control (CM1139)
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 51A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NEWCOMB PART No.	IRC PART No.	
52	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st Mic. Amp. Grid
53	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 2nd Mic. Amp. Grid
54	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 3rd Mic. Amp. Grid
55	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Tone Compensation
56	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
57	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 1st Mic. Amp. Screen Dropping
58	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 2nd Mic. Amp. Screen Dropping
59	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 3rd Mic. Amp. Screen Dropping
60	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st Mic. Amp. Plate Load
61	270KΩ	½		BTS-270K	Red-Vi.-Yl. 2nd Mic. Amp. Plate Load
62	270KΩ	½		BTS-270K	Red-Vi.-Yl. 3rd Mic. Amp. Plate Load
63	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Isolation
64	560KΩ	½		BTS-560K	Grn.-Blue-Yl. "
65	560KΩ	½		BTS-560K	Grn.-Blue-Yl. "
66	560KΩ	½		BTS-560K	Grn.-Blue-Yl. "
67	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue Audio Grid
68	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Audio Screen Dropping
69	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Audio Plate Load
70	20 Meg.	½		BTS-22 Meg.	Red-Blk.-Blue Tone Compensation
71	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Tone Boost Grid
72	5600Ω	½		BTS-5600	Grn.-Blue-Red Tone Boost Cathode
73	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Tone Boost Cathode
74	180KΩ	½		BTS-180K	Br.-Gray-Yl. Tone Boost Plate Load
75	27KΩ	½		BTS-27K	Red-Vi.-Or. Tone Compensation
76	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Driver Grid
77	2700Ω	½		BTS-2700	Red-Vi.-Red Driver Cathode
78	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Driver Plate Load
79	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. Over Load Amplifier Grid
80	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. Over Load Amplifier Plate Load
81	12KΩ	½		BTS-12K	Br.-Red-Or. Indicator Cathode
82	30KΩ	1		BTA-33K	Or.-Or.-Or. Bleeder
83	270KΩ	½		BTS-270K	Red-Vi.-Yl. Bleeder
84	2700Ω	½		BTS-2700	Red-Vi.-Red Phase Inverter Cathode
85	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. Phase Inverter Grid
86	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Phase Inverter Plate Load
87	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Vol. Ind. Amplifier Plate Load
88	2.7 Meg.	½		BTS-2.7 Meg.	Red-Vi.-Grn. Vol. Ind. Amplifier Grid
89	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Vol. Ind. Amplifier Plate Load
90	180KΩ	½		BTS-180K	Br.-Gray-Yl. Output Grid
91	180KΩ	½		BTS-180K	Br.-Gray-Yl. Output Grid
92	27KΩ	½		BTS-27K	Red-Vi.-Or. Phase Inverter Grid
93	68KΩ	½		BTS-68K	Blue-Gray-Or. Feedback
94	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Volume Indicator Network
95	5100Ω	½		BTS-4700	Grn.-Br.-Red " "
96	200Ω	10		AB-200	Output Cathode
97	30KΩ	1		BTA-33K	Or.-Blk.-Or. Voltage Dropping
98	10KΩ	1		BTA-10K	Br.-Blk.-Or. "
99	180KΩ	½		BTS-180K	Br.-Gray-Yl. Voltage Regulator Network
100	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Voltage Regulator Network
101	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. Voltage Regulator Grid
102	18KΩ	½		BTS-18K	Br.-Gray-Or. Volume Indicator Net-See Note 1
103	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. Volume Indicator Net
104	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. Output Grid

Note 1 - Not used in all models.

CHASSIS—BOTTOM VIEW

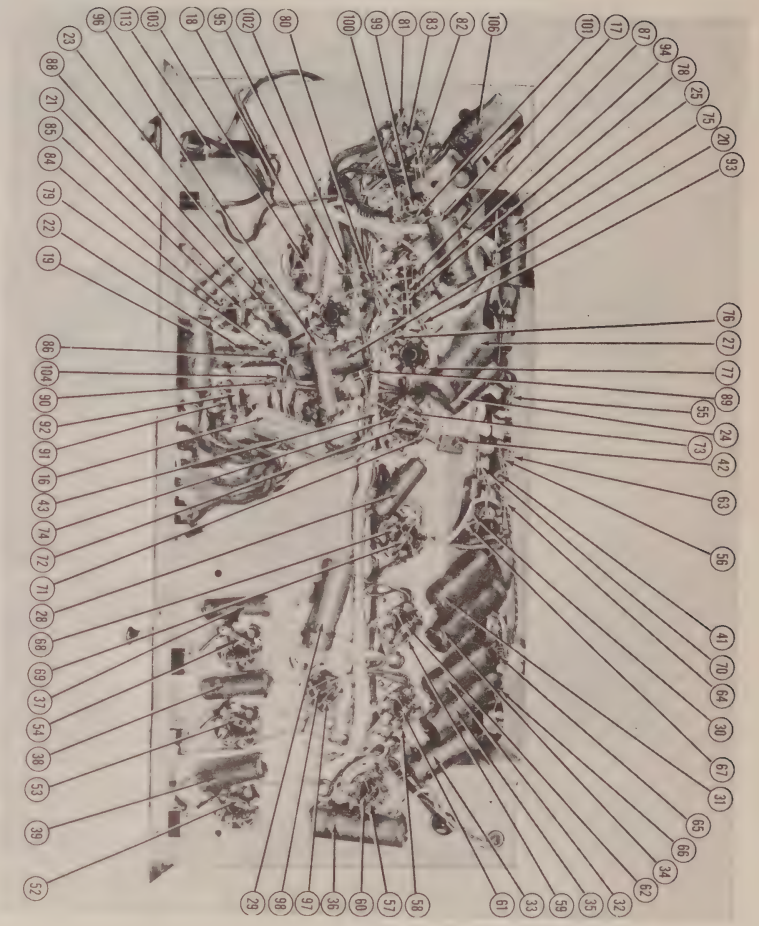


FIG. C

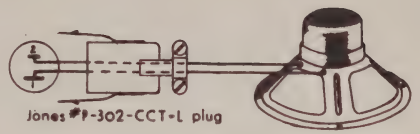


FIG. E

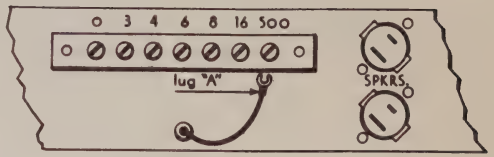


FIG. F

INPUT TRANSFORMER CONNECTIONS

The red input transformer socket is wired for 50 ohms at the factory. If it is desired to change this to 200 ohms, remove the jumper from pins #5 to 6 and the jumper from pins #7 to 8. Then install a new jumper from pins #6 to 7. Do not remove or change any other connections on the socket.

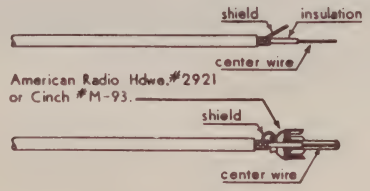


FIG. D

CONNECTION OF PHONOGRAPH PICKUP

A crystal phonograph pickup having an output voltage of 1 volt or higher should be used. All wire from pickup to amplifier should be shielded. Connection is made by means of a Cinch #M-93 or American Radio Hardware #2921 plug wired to the phonograph pickup cable as shown in Figure #D.

CONNECTION OF LOUDSPEAKERS

Loudspeakers can either be connected to the sockets marked "Spkr" or to the 7 lug terminal strip. The sockets are generally used for portable applications and require Jones #P-302-CCT-L plugs connected to the speakers as shown in Figure E.

When connecting the loudspeakers it is necessary that the amplifier output impedance be matched to the combined impedance of the loudspeakers. The various output impedances provided by the amplifier are connected directly to the 7 lug terminal strip and marked as shown in Figure F. When connecting loudspeakers directly to this terminal strip, one lead is connected to the terminal marked "0", the other is connected to the appropriate impedance on the terminal strip that matches the impedance of the loudspeaker or loudspeakers. If the loudspeakers are connected to the sockets rather than directly to the terminal strip, the desired impedance to the sockets is selected by connecting the lug "A" (Figure F) to the proper terminal.

When several speakers are to be used, they are generally connected in parallel. The impedance of parallel connected speakers (each having the same impedance) is equal to the impedance of one speaker divided by the number of speakers. For example: If two 8 ohm speakers are connected in parallel, the total impedance will be 4 ohms. If the speakers are connected in series the resulting impedance will be the sum of the individual speaker impedance. Such as: two 8 ohm speakers connected in series will have an impedance of 16 ohms.

It is important that proper polarity be observed when connecting loudspeakers, so that all cones or diaphragms work in unison. The point to remember is, that the energy should enter all loudspeakers at the same corresponding terminal. This statement refers only to identical loudspeakers. Where dissimilar speakers or speakers of different brands are used together, the problem of phasing becomes more difficult.

PARTS LIST AND DESCRIPTIONS (Continued)

TONE CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	NEWCOMB PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
105		2400Ω	49 Henries	TC-19		T20C51*	*Drill new mounting holes.

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	NEWCOMB PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
106	.012A	2000Ω	45 Henries	TC-5		T20C51	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	NEWCOMB PART No.	STANCOR PART No.	THORDARSON PART No.	
107	117V AC @ 1.07A	270V CT @ .122A	4.7V AC @ 1.8A	6.3V AC & 6.0A SEC. 4 5.3V AC @ .3A	TR-93	P-6014† P-6134#	T22R32	†Use universal mounting brkts. #Drill mounting holes and mount beneath chassis.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NEWCOMB PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
108	6500Ω CT	32Ω 4Ω 6Ω 8Ω 16Ω 500Ω	260Ω CT	.25Ω .27Ω .3Ω .32Ω 5Ω 25Ω	TR-90	T22S68*	A-3801*		*Drill new mounting holes.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					NEWCOMB PART No.		
109	Bayonet	6-8	0.20	White			Type 51
110	"	6-8	0.20	"			" "
111	"	6-8	0.20	"			" "

MISCELLANEOUS

ITEM No.	PART NAME	NEWCOMB PART No.	NOTES
112	Switch	SY-3	AC Line Switch
113	Fuse		2 Amp.

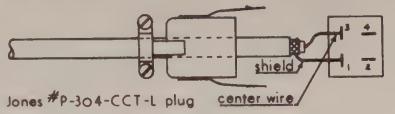


FIG. A

FOR HIGH IMPEDANCE MICROPHONE INPUT

Connect the shield to #1 terminal and the wire to #3 terminal. Be sure the shield runs inside the cap to minimize hum pickup. If it is desired to make an extension cable it will be necessary to solder in addition to the shield on #1 terminal a short piece of wire, the other end to be fastened securely to the cap.

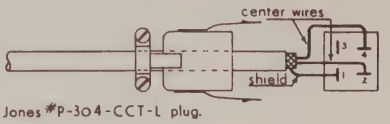
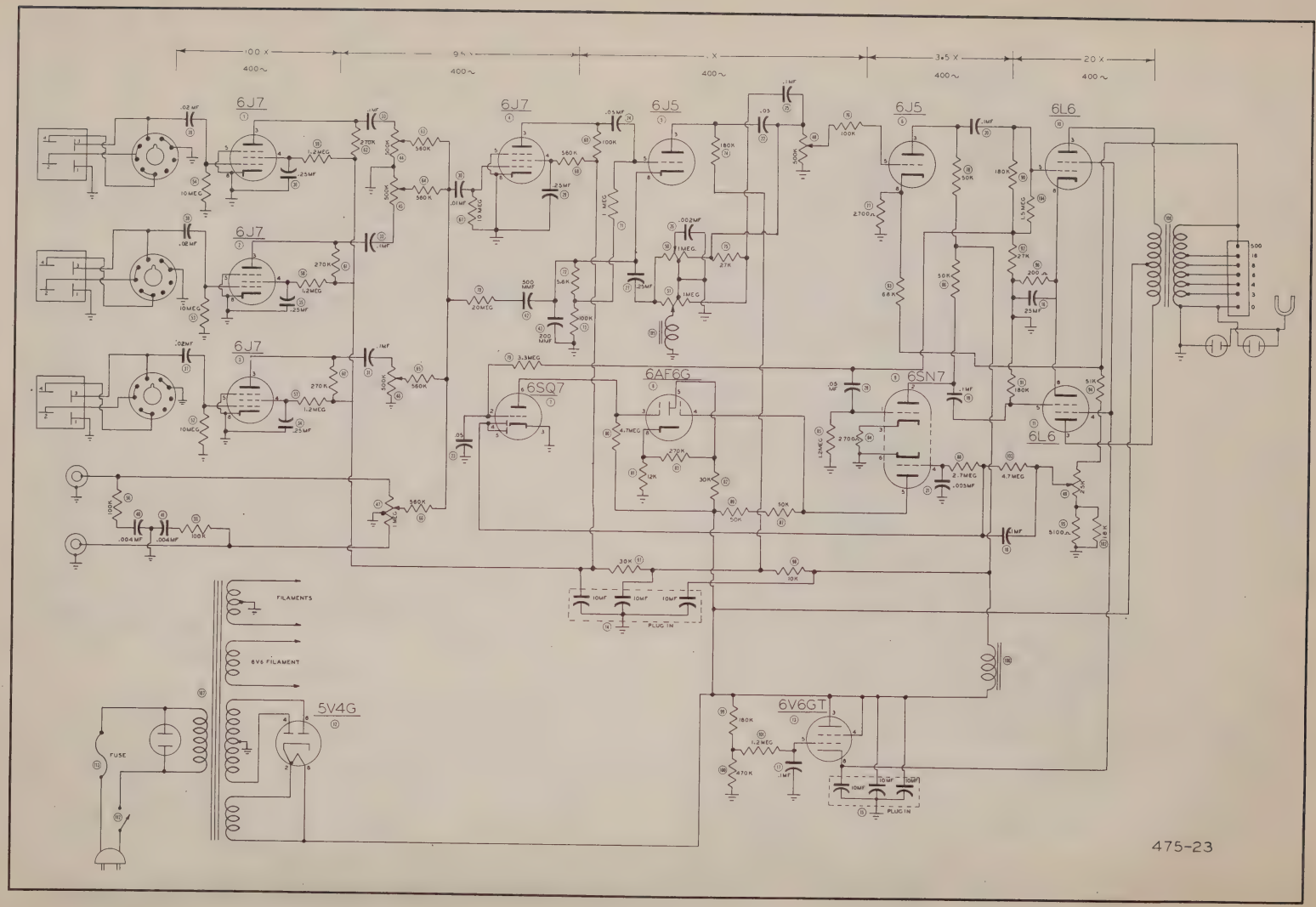
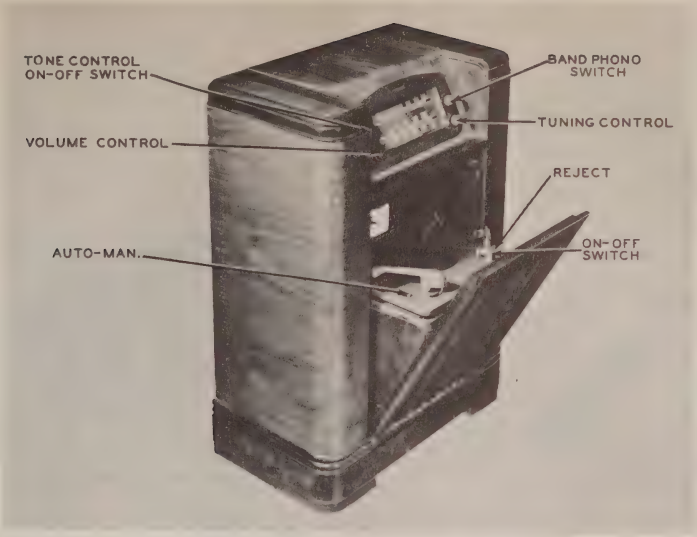


FIG. B

FOR 50 OR 200 OHM MICROPHONE INPUT

Connect the shield to #1 terminal. Connect the two center wires to #2 and #4 terminals. Be sure the shield runs inside the cap to minimize hum pickup. If it is desired to make an extension cable it will be necessary to solder in addition to the shield to #1 terminal, a short piece of wire, the other end to be fastened securely to the cap.


100 X
400~
9 X
400~
X
400~
3.5 X
400~
20 X
400~
6J7
6J7
6J7
6J7
6J5
6J5
6L6
6L6
6AF6G
6SQ7
6SN7
6V6GT
5V4G
FILAMENTS
6V6 FILAMENT
FUSE
PLUG IN
PLUG IN
475-23



PHILCO MODEL 46-1226

TRADE NAME	Philco, Model 46-1226		
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.		
TYPE SET TUBES (EIGHT)	AC Operated Automatic Phono - Radio Combination-Superheterodyne Rcvr. with Loop Ant. Types, 7AF7 Converter, (2) 7H7 1st and 2nd IF Amp., 7C6 Det.-AVC-AF, 6J5 Phase Inverter, (2) 6K6GT/G Power Output, 5Y3GT/G Rectifier		
POWER SUPPLY	110-120 Volts AC	RATING	.780 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1720 KC	**SHORT WAVE**	9.3-15.5MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn variable fully closed. With receiver in cabinet, set pointer to the last reference mark at the low frequency end of the broadcast band. Remove receiver from cabinet and mark the position of the pointer. All measurements in the alignment below are taken from this point. Volume should be at maximum, output should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to term. "1" of ant. term. board. Low side to chassis.	455KC	BC	Tuning cap. fully closed	To terminals 2 and 3 of ant. terminal board.	A1,A2, A3,A4.	Adjust for maximum output
	Loop	580KC	"	1" from reference mark at left end of dial backplate.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
	"	1700KC	"	6½" from reference mark at left end of dial backplate.	"	A6	"
	"	1500KC	"	Tune for maximum output.	"	A7	"
	"	580KC	"	"	"	A5	Rock variable and adjust for maximum output. Repeat last 4 steps until no further increase can be obtained.
	"	15MC	SW	6-5/16 from reference mark at left end of dial backplate.	"	A8	Adjust for maximum output
	"	"	"	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	7AF7	7AF7	8AC	
2	1st IF Amp.	7H7	7H7	8V	
3	2nd IF Amp.	7H7	7H7	8V	
4	Det.-AVC-AF	7C6	7C6	8W	
5	Phase Inverter	6J5GT	6J5GT	6Q	
6	Power Output	6K6GT/G	6K6GT/G	7S	
7	" "	6K6GT/G	6K6GT/G	7S	
8	Rectifier	5Y3GT/G	5Y3GT/G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9	35	450		EL-4	AF8J	UP4045	FP146	DY-40-450	Filter
10A	25	450	30-2556	EL-3	AF44J	UP7DJ541†	FP434†	DY-2x30-450	■ Filter
B	10			UT-12					▲ "
11A	.01	600	3903-ODG	TC-11	684-01	TVC6S1	0T101	TM-6-01	Line Bypass
B	.01	600		TC-11	684-01	TVC6S1	0T101	TM-6-01	" "
12	.003	600	61-0109	TC-23	684-003	DT6D3	TP406	S-6-003	Output Plate Bypass
13	.1	200	61-0113	TC-1	484-.1	DT4P1	TP428	S-4-1	Bias Filter
14	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	Audio Coupling
15	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	" "
16	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	" "
17	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
18	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	" "
19	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	Audio Coupling
20	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	" "
21	.1	400	61-0113	TC-1	484-.1	DT4P1	TP428	S-4-1	2nd IF Plate Decoup.
22	.03	400	45-3500-1	TC-13	484-03	DT4S3	TP424	S-4-03	2nd IF Screen Bypass
23	.05	400	61-0122	TC-15	484-05	DT4S5	TP426	S-4-05	2nd IF Cath. Bypass
24	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	1st IF Plate Decoup.
25	.03	400	45-3500-1	TC-13	484-03	DT4S3	TP424	S-4-03	1st IF Screen Bypass
26	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	AVC Filter
27	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	" "
28	.01	400	61-0120	TC-11	484-01	DT4S1	TP421	S-4-01	Conv. Plate Decoup.
29	.006	400	45-3500-7	TC-26	484-006	DT6D6	TP409	S-6-006	Conv. Cath. Coupling
30	100	500	6010105407	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Tone Compensation
31	240	500	6010245307	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Diode Filter
32	100	500	6010105407	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	" "
33	255	500	301220-24						Fixed Padder
34	240	500	6010245307	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Osc. Feedback
35	100	500	30-1225-2	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Osc. Grid Bypass
36	10	500	6000105407	1FM-41	1468-00001	5W5Q1	MC215	MO.5-41	Neutralizing
37	240	500	6010245307	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	RF Coupling
38	255	500	301220-24						Fixed Padder
39	100	500	6010105407	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Audio Plate Bypass

†Parallel sections to obtain desired capacity.

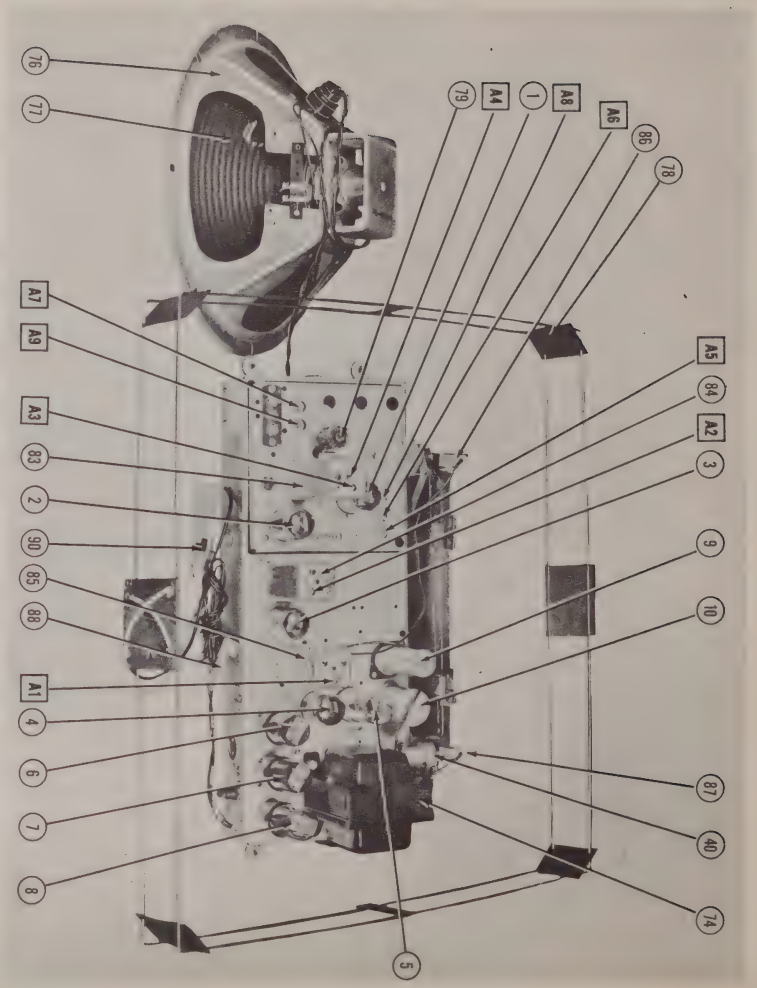
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
40	6 Meg.	1	33-5538-1				Tone Control & Switch
41A	2 Meg.	1	33-5535-1	TM259	D1B-139X		Volume Control
B	Shaft		Not Req.	Not Req.	A		Attach to 41A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
42	280Ω	10		ABA-300	Bias-See Note 1
43	10KΩ	2		BT-2-10K	Br.-Blk.-Or. Filter-See Note 2
44	300Ω	10		AB-300	Surge Limiter-See Note 3
45	1000Ω	10		AB-1000	Filter-See Note 3

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	
46	330KΩ	½	66-4333340	BTS-330K	Or.-Or.-Yl. Output Grid
47	330KΩ	½	66-4333340	BTS-330K	Or.-Or.-Yl. " "
48	56KΩ	½	66-3563340	BTS-56K	Grn.-Blue-Or. Phase Inverter Plate Load
49	4700Ω	½	66-2473340	BTS-4700	Yl.-Vi.-Red Phase Inverter Cathode
50	47KΩ	½	66-3473340	BTS-47K	Yl.-Vi.-Or. Phase Inverter Cathode
51	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. Phase Inverter Grid
52	220KΩ	½	66-4223340	BTS-220K	Red-Red-Yl. AF Plate Load
53	10 Meg.	½	66-6103340	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
54	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. Tone Compensation
55	4.7Ω	½	66-9473340	BW-½-4.7	Yl.-Vi.-Gold Feedback
56	68Ω	½	66-0683340	BW-½-68	Blue-Gray-Blk. Feedback
57	150KΩ	½	66-4153340	BTS-150K	Br.-Grn.-Yl. Phono Shunt
58	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. Bias Network-See Note 4
59	330KΩ	½	66-4333340	BTS-330K	Or.-Or.-Yl. Diode Load
60	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. RF Filter
61	3.3 Meg.	½	66-6333340	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
62	2.2 Meg.	½	66-6223340	BTS-2.2 Meg.	Red-Red-Grn. " "
63	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling
64	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. 2nd IF Screen Dropping
65	150Ω	½	66-1153340	BW-½-150	Br.-Grn.-Br. 2nd IF Cathode
66	27KΩ	½	66-3273340	BTS-27K	Red-Vi.-Or. 1st IF Screen Dropping
67	68Ω	½	66-0683340	BW-½-68	Blue-Gray-Blk. 1st IF Cathode
68	10KΩ	½		BTS-10K	Br.-Blk.-Or. Mixer Plate Decoupling-See Note 5
69	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. Oscillator Plate Load
70	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Oscillator Grid-See Note 6
71	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. Mixer Cathode Bias-See Note 7
72	2200Ω	½	66-2223340	BTS-2200	Red-Red-Red Mixer Cathode
73	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. Mixer Grid

Note 1-On IRC Replacement set slider 280Ω from one end.
Note 2-Some models use 15KΩ 2 watt resistor in this application
Note 3-Used only in models using PM speaker
Note 4-Some models use 150KΩ in this application.
Note 5-Some models use 4700Ω in this application.
Note 6-Some models use 15KΩ in this application.
Note 7-Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA		
	PRI.	SEC. 1	SEC. 2	SEC. 3	PHILCO PART No.	STANCOR PART No.	THORDARSON PART No.
74	117V AC @ .750A	640V CT @ .112A	4.9V AC @ 1.8A	6.5V AC @ 2.2A SEC. 4 5.0V AC @ .46A	32-8248		

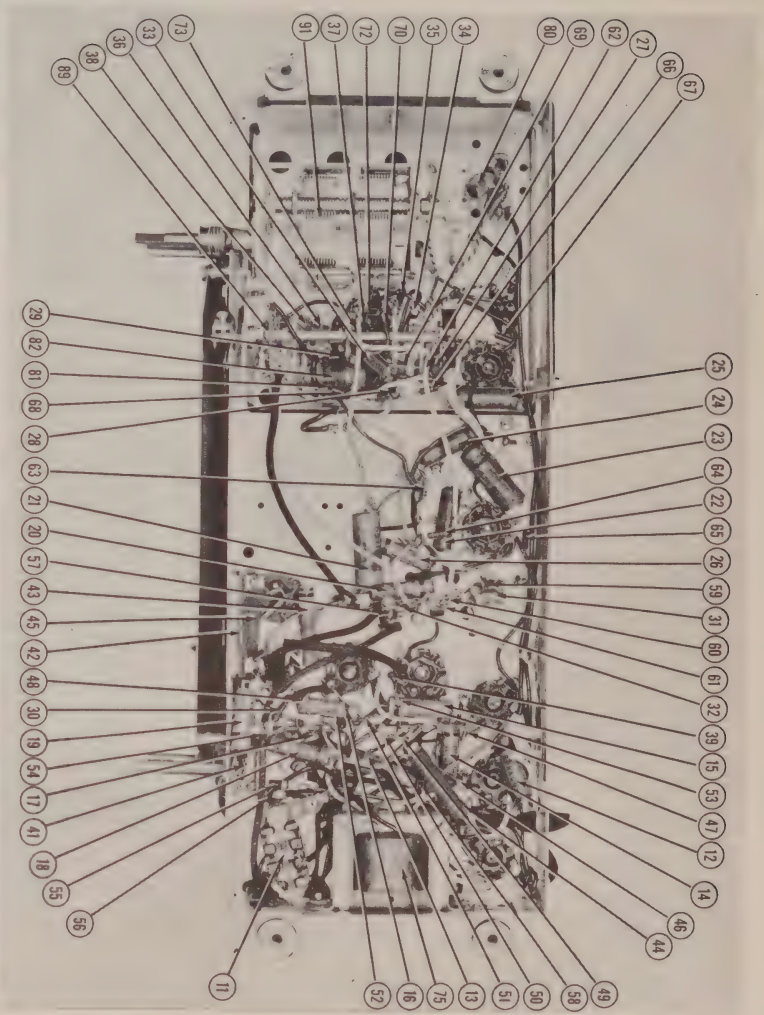
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
75	7300Ω CT	3.2Ω	580Ω CT	.8Ω	32-8274	A-3824‡	T22S56‡		‡Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PHILCO PART No.	JENSEN PART No.		
76A	FIELD PM	VC IMP. 3.2Ω	36-1611-2	ST-102‡ Mod. P12S		‡Change output transformer to match 8Ω voice coil.
77A	CONE DIA. 11-7/8"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
76B	FIELD RES. 680Ω	VC IMP. 5.3Ω	36-1595			Alternate Dynamic Speaker
77B	CONE DIA. 11¾"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

CHASSIS—BOTTOM VIEW



NOTE: VOLTAGE & RESISTANCE TAKEN IN THE STANDARD BROADCAST POSITION.

VOLTAGE READINGS

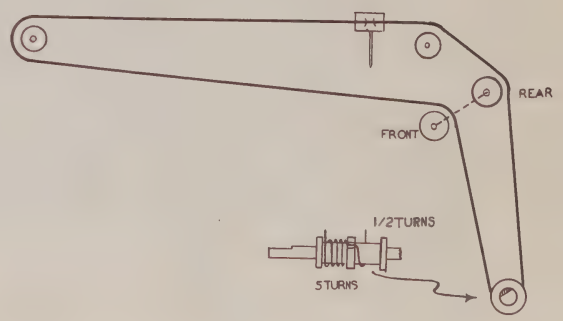
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7AF7	0V.	0V.	85V.DC	-11V.DC	-2.1 V.DC	205V.DC	14V.DC	6.4 V.AC
2	7H7	6.4V.AC	260V.DC	130V.DC	0V.	0V.	0V.	.8 V.DC	0V.
3	7H7	0V.	255V.DC	118V.DC	0V.	0V.	0V.	1.75V.DC	6.4 V.AC
4	7C6	3.3V.AC	125V.DC	-.35V.DC	0V.	-.4 V.DC	-.4 V.DC	0V.	3.3V.AC
5	6J5HT	0V.	3.3V.AC	200V.DC	0V.	21V.DC	0V.	3.3 V.AC	64V.DC
6	6K6	0V.	6.4V.AC	300V.DC	300V.DC	-8.5V.DC	0V.	0V.	0V.
7	6K6	0V.	6.4V.AC	300V.DC	300V.DC	-8.5V.DC	0V.	0V.	0V.
8	5Y3GT/G	0V.	330V.DC	60V.AC	350V.AC	45V.AC	350V.AC	45V.AC	330V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7AF7	0Ω	.7Ω	128KΩ	50 KΩ	5 MEG.	85 KΩ	2200Ω	.1Ω
2	7H7	.1Ω	85 KΩ	122 KΩ	0Ω	0Ω	5.5MEG.	62Ω	0Ω
3	7H7	0Ω	85 KΩ	128 KΩ	0Ω	0Ω	8Ω	140Ω	.1Ω
4	7C6	.1Ω	300 KΩ	10 MEG.	0Ω	390 KΩ	390 KΩ	0Ω	.1Ω
5	6J5GT	INF.	.1Ω	140 KΩ	INF.	1 MEG.	1.9 MEG.	.1Ω	50 KΩ
6	6K6	INF.	.1Ω	85 KΩ	85 KΩ	390 KΩ	INF.	0Ω	0Ω
7	6K6	INF.	.1Ω	85 KΩ	85 KΩ	380 KΩ	INF.	0Ω	0Ω
8	5Y3GT/G	INF.	85 KΩ	INF.	350Ω	INF.	350Ω	INF.	85 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DIAL CORD DRIVE

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA MEISSNER PART No.	
78	Loop Ant.		.1Ω	76-1989		
79	BC Ant.Coil		1.5Ω	32-4033-1		
80	SW Ant. Shunt Coil		.1Ω	32-4050-6		
81	BC Osc. Coil		3Ω	32-4019-2	14-1040	
82	SW Osc. Coil		.1Ω	32-4113		
83	Input IF	1Ω	21Ω	32-4106		
84	Inter. IF	3.5Ω	9.5Ω	32-4107		
85	Output IF	10Ω	10Ω	32-4108		

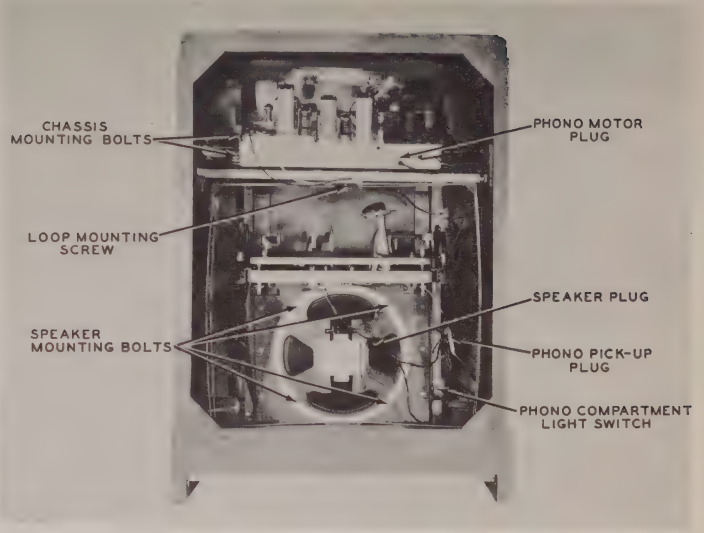
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA	INSTALLATION NOTES
86	Bayonet	7.5	0.20	White	34-2040		Type 51
87	"	7.5	0.20	"	34-2040		" "
88	"	6-8	0.40	"	34-2484		Type 55

MISCELLANEOUS

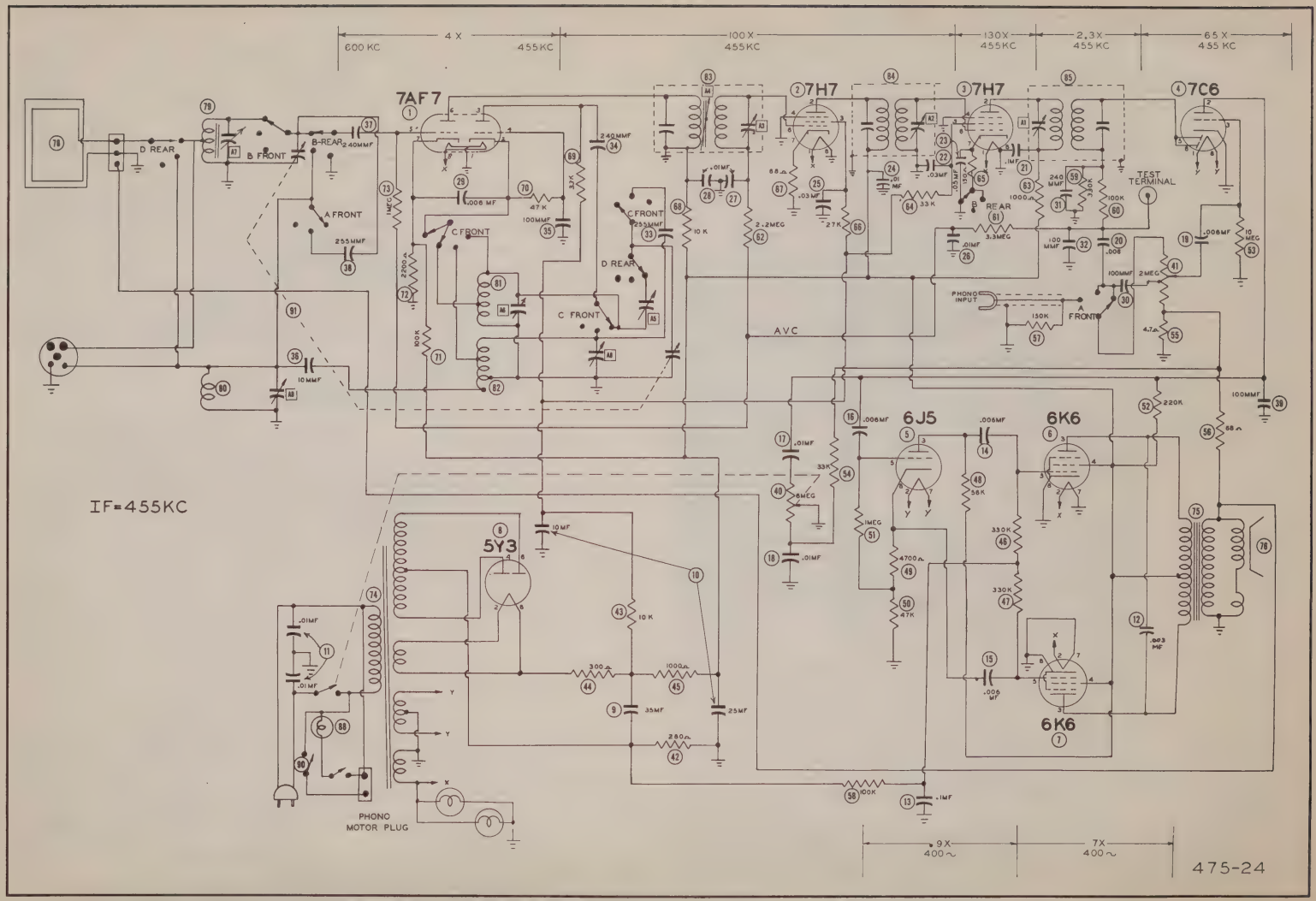
ITEM No.	PART NAME	PHILCO PART No.	NOTES
89	Switch	42-1776	Band-Phono
90	"	42-1702	Phono Compartment Lamp Control
91	2 Gang Var. Cap	31-2719	(17-526 MMF each section)
A5	Trimmer Strip	31-6464	BC Osc. Padder
A6			BC Osc. Trimmer
A8			SW Osc. Trimmer
A7	Trimmer Strip	31-6476	BC Ant. Adj.
A9			SW Ant. Adj.
	Dial Scale	76-2228	Backplate Included
	Dial Pointer	56-3179	

CHASSIS—BOTTOM VIEW

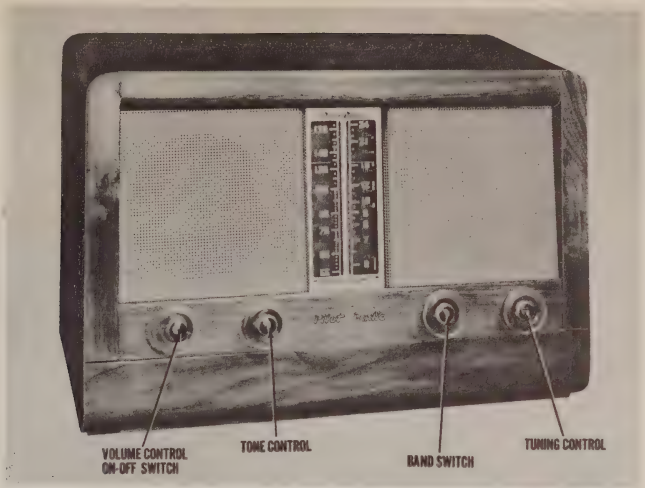


DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type knobs from the front of cabinet.
2. Disconnect phono-motor plug from chassis.
3. Disconnect phono-pick-up plug from receptacle.
4. Disconnect speaker plug from speaker.
5. Disconnect loop ant. leads from terminal board.
6. Remove two Phillips head screws holding phono-compartment light switch. Remove switch.
7. Remove phono-compartment light from bracket.
8. Remove four chassis mounting bolts. Remove chassis.
9. Remove screw holding loop ant. Remove loop ant.
10. Remove four hex nuts holding speaker. Remove speaker.



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



PILOT
MODEL T-411-U

PILOT
MODEL T-411-U

PILOT MODEL T-411-U

TRADE NAME	Pilot, Model T-411-U
MANUFACTURER	Pilot Radio Corp. 37-06 36th St., Long Island City, N.Y.
TYPE SET	AC Operated Two Band Superheterodyne Receiver-Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 RF Amp., 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .440 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1720KC — SHORT WAVE 5.67-24MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to bottom reference mark on left edge of dial backplate. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #4 (grid) 12SK7 (1). Low side to chassis.	455KC	BC	Low end of dial.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
400Ω	High side to ext. ant. lug. Low side to chassis.	21MC	SW	Top reference mark on left edge of dial back plate.	"	A5	" " " "
400Ω	"	"	"	Tune for maximum output.	"	A6	Rock variable and adjust for maximum output.
200MMFD.	"	1400KC	BC	2nd ref. mark from top on left edge of dial back-plate.	"	A7	Adjust for maximum output
200MMFD.	"	600KC	"	3rd ref. mark from top on left edge of dial back-plate.	"	A8	Adjust for maximum output. Repeat last two steps until no increase in output is obtained.
200MMFD.	"	1400KC	"	Tune for maximum output.	"	A9,A10	Adjust for maximum output. Tune in station near 1400KC and adjust for maximum output. Adjust A9 on loop position of ant. swtich. Adjust A10 on ext. ant. position of ant. switch.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7	12SK7	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PILOT PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	40	250	24-40	UT-402	PRS450-40	BR4025	TC78	M-40-350	Filter
8	40	250	24-40	UT-402	PRS450-40	BR4025	TC73	M-40-350	"
9	.05	600	22-31	TC-15	684-05	DT6S5	TP415	S-6-05	Line Bypass
10	.1	400	22-40	TC-1	484-.1	DT4P1	TP428	S-4-1	Tone Compensation
11	.01	600	22-18	TC-11	684-01	DT6S1	TP410	S-6-01	Output Plate Bypass
12	.05	200	22-28	TC-15	484-05	DT4S5	TP426	S-4-05	Bias Filter
13	.01	400	22-17	TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
14	.005	600	22-10	TC-25	684-005	DT6D5	TP408	S-6-005	" "
15	.05	400	22-30	TC-15	484-05	DT4S5	TP426	S-4-05	RF Bypass Pwr. Supp.
16	.05	200	22-28	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
17	.01	400	22-17	TC-11	484-01	DT4S1	TP421	S-4-01	RF Bypass Pwr. Supp.
18	.01	400	22-17	TC-11	484-01	DT4S1	TP421	S-4-01	" " " "
19	.05	400	22-30	TC-15	484-05	DT4S5	TP426	S-4-05	RF Cath. Bypass
20	.005	600	22-11	TC-25	684-005	DT6D5	TP408	S-6-005	Ant. Coupling
21	400	500	20-27	1FM-34	1468-0004	SW5T4	MC243	MO.5-34	Audio Plate Bypass
22	100	500	20-14	1FM-31	1468-0001	SW5T1	MC235	MO.5-31	Tone Compensation
23	250	500	20-22	1FM-325	1468-00025	SW5T25	MC240	MO.5-325	IF Bypass Diode
24	25	500	20-8	MS-425	1468-000025	SW5Q25	MC220	MO.5-425	Diode Coupling
25	250	500	20-22	1FM-325	1468-00025	SW5T25	MC240	MO.5-325	Osc. Grid Capacitor
26	250	500	20-22	1FM-325	1468-00025	SW5T25	MC240	MO.5-325	RF Coupling
27	40	500	20-11	1FM-44	1468-00004	SW5Q4	MC223	MO.5-44	Ant. Pri. Shunt
60	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	AVC Filter

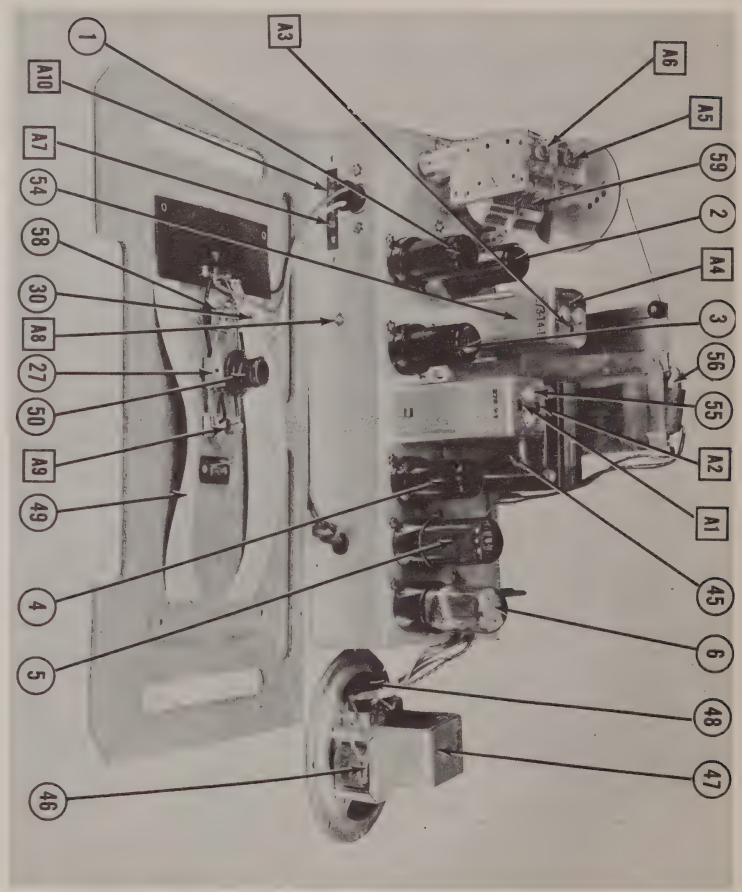
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
28A	500KΩ	1	36-5	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 28A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
29A	10KΩ	1	37-14	MR18	D13-116	M-81-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 29A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	IRC PART No.	IDENTIFICATION CODES
30	68KΩ	½	30-268	BTS-68K	Blue-Gray-Or. Loop Shunt
31	150Ω	½	31-81	BW-½-150	Br.-Grn.-Br. RF Cathode
32	2000Ω	½		BTS-2200	Red-Blk.-Red RF Plate Load
33	4700Ω	½	30-399	BTS-4700	Yl.-Vi.-Red Converter Grid
34	220KΩ	½	30-271	BTS-220K	Red-Red-Yl. AVC Network
35	22KΩ	½	30-266	BTS-22K	Red-Red-Or. Oscillator Grid
36	2.2 Meg.	½	30-278	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
37	2.2 Meg.	½	30-278	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
38	47KΩ	½	30-267	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
39	3.9 Meg.	½	30-375	BTS-3.9 Meg.	Or.-White-Grn. AF Grid
40	330KΩ	½	30-295	BTS-330K	Or.-Or.-Yl. AF Plate Load
41	330KΩ	½	30-295	BTS-330K	Or.-Or.-Yl. Output Grid
42	68KΩ	½	30-268	BTS-68K	Blue-Gray-Or. Bias Filter
43	47Ω	½	31-40	BW-½-47	Yl.-Vi.-Blk. Bias
44	82Ω	1	31-82	BW-1-82	Gray-Red-Blk. Bias

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC.	TAP 1	TAP 2	PILOT PART No.	STANCOR PART No.	THORDARSON PART No.	
45	117V AC @ .44A	150V AC @ .073A	117V AC @ .150A	6.0V AC @ .150A	55-2			

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PILOT PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
46	2800Ω	3.4Ω	250Ω	.4Ω	Part of 47-28	A-3878	TDLS45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD RES.	VC IMP.	PILOT PART No.	JENSEN PART No.		
47	2800Ω	3.4Ω	40-26			
	CONE DIA.	VC DIA.				
48	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

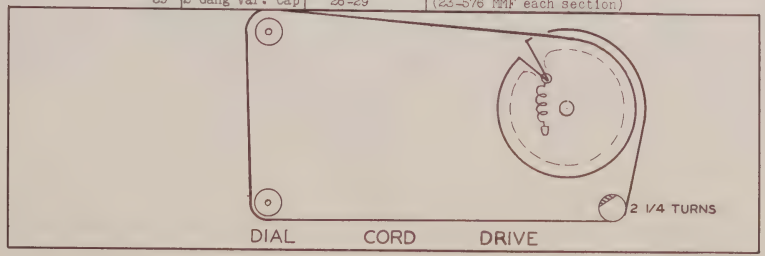
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PILOT PART No.	MEISSNER PART No.	
49	Loop Ant.		1Ω	284-23		
50	BC Ant.Coil	32Ω	0Ω		14-1026	
51	SW Ant.Coil	1.5Ω	.2Ω	70.54	14-1044	
52A	BC Osc.Coil	.5Ω	2Ω	72.45		52A & 52B wound on same form
B	SW " "		0Ω			
53	Peaking Coil		1Ω	75-12		
54	Input IF	11Ω	10.5Ω	273-14	16-6658	
55	Output IF	8.5Ω	8Ω	273-93	16-6660	

DIAL LIGHT

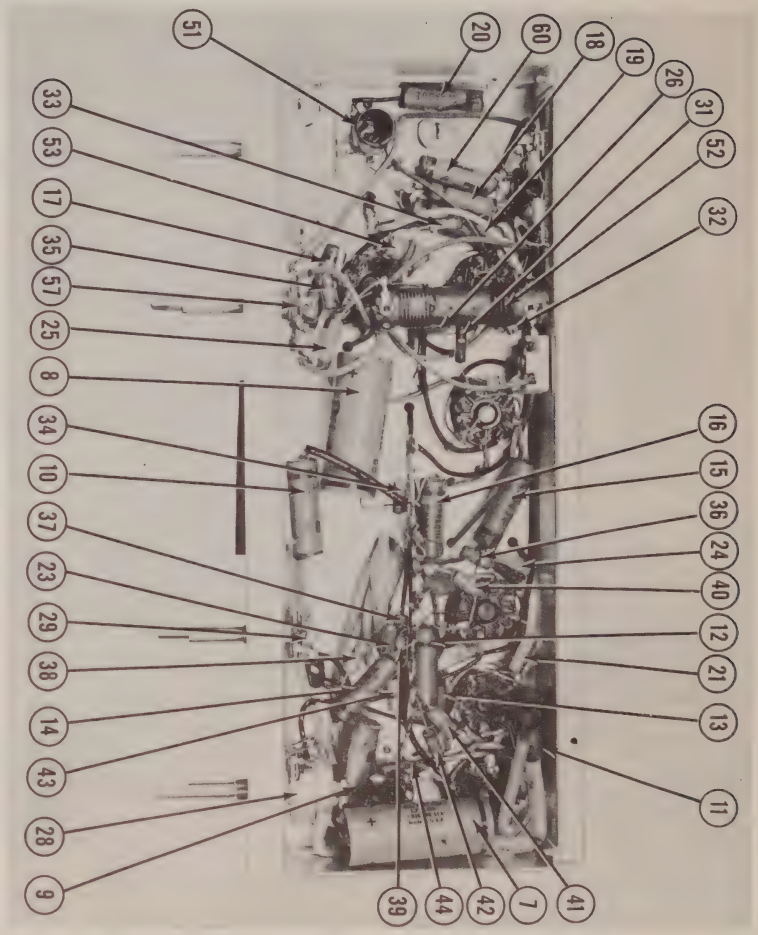
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PILOT PART No.		
56	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

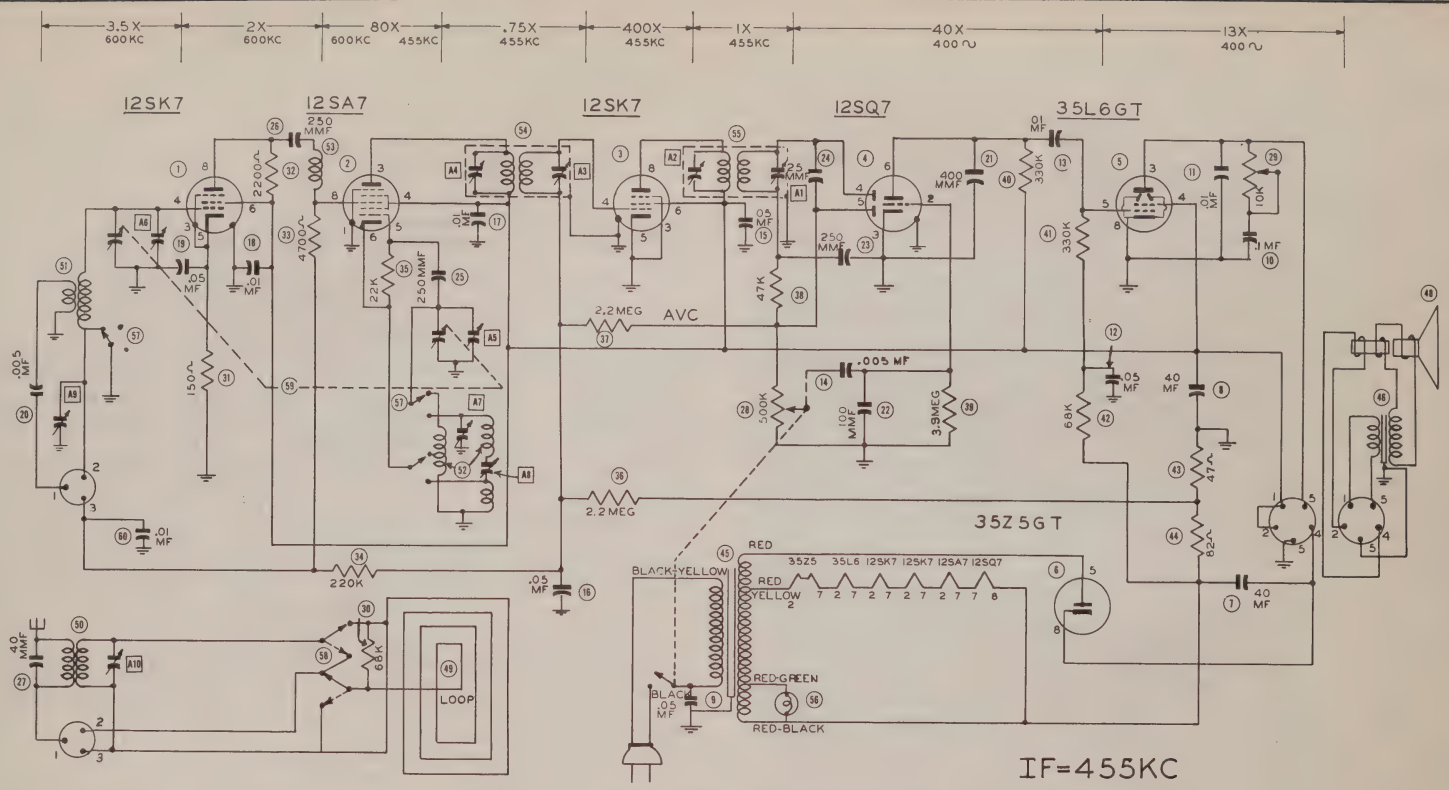
ITEM No.	PART NAME	PILOT PART No.	NOTES
57	Bandswitch		
58	Ant. Switch		
59	2 Gang Var. Cap	26-29	(23-576 MMF each section)



CHASSIS—BOTTOM VIEW



PILOT MODEL T-411-U



NOTE: VOLTAGE & RESISTANCE TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	0V.	*37 V.AC	2.5 V.DC	-2 V.DC	2.5 V.DC	120 V.DC	*24 V.AC	100 V.DC
2	12SA7	0V.	*24 V.AC	120 V.DC	0V.	-6 V.DC	0V.	*72 V.AC	±2 V.DC
3	12SK7	0V.	*50 V.AC	0V.	-3 V.DC	0V.	120 V.DC	*37 V.AC	120 V.DC
4	12SQ7	0V.	-3 V.DC	0V.	±2 V.DC	0V.	72 V.DC	*12 V.AC	* 0V.
5	35L6GT	0V.	*85 V.AC	115 V.DC	120 V.DC	-10 V.DC	-10 V.DC	*50 V.AC	* 0V.
6	35Z5GT	0V.	*117 V.AC	0V.	0V.	*150 V.AC	-12 V.DC	*85 V.AC	150 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	0 Ω	* 28 Ω	140 Ω	1.2 MEG.	140 Ω	30 KΩ	* 20 Ω	30 KΩ
2	12SA7	0 Ω	* 20 Ω	30 KΩ	0 Ω	20 KΩ	0 Ω	* 11 Ω	1.2 MEG.
3	12SK7	0 Ω	* 35 Ω	0 Ω	1 MEG.	0 Ω	30 KΩ	* 28 Ω	30 KΩ
4	12SQ7	0 Ω	3.7 MEG.	0 Ω	480 KΩ	19 Ω	320 KΩ	* 11 Ω	* 0 Ω
5	35L6GT	INF.	* 40 Ω	30 KΩ	30 KΩ	385 KΩ	115 Ω	* 35 Ω	0 Ω
6	35Z5GT	INF.	* 35 Ω	INF.	INF.	160 Ω	115 Ω	* 40 Ω	30 KΩ

* MEASURED FROM PIN NO. 8 OF 12SQ7.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-25

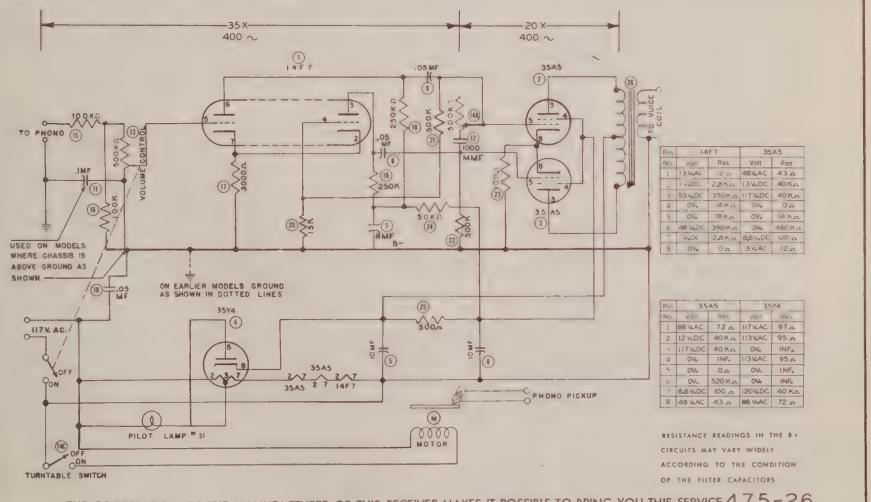
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting negative (-) 3 volts to the AVC line. Measurement taken with antenna switch in external antenna position.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6-- Volume control at maximum, no signal applied for voltage measurements.

REGAL
MODELS AP40, ARP400, ARP450

REGAL
MODELS AP40, ARP400, ARP450

TRADE NAME	Regal, Models AP40, ARP400, ARP450
MANUFACTURER	Regal Electronics Corp., 20 W. 20th St., New York, N.Y.
TYPE SET	AC Operated Phonograph with 4 tube Amplifier & Speaker
TUBES (FOUR)	Types, 14F7 AF Amp.-Phase Inverter, (2) 35L6GT or 35A5 Power Output, 35Z5GT or 35Y4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .280 Amp. @ 117 Volts AC



Pin No.	14F7 Volt	14F7 Res	35A5 Volt	35A5 Res
1	13 VAC	0 Ω	86 VAC	43 Ω
2	1 VDC	2.8 MΩ	113 VDC	40 KΩ
3	53 VDC	370 KΩ	117 VDC	40 KΩ
4	0V.	48 KΩ	0V.	0 Ω
5	0V.	78 KΩ	0V.	58 KΩ
6	48 VAC	390 KΩ	0V.	460 KΩ
7	VOX	2.8 MΩ	58 VDC	100 Ω
8	0V.	0 Ω	3 VAC	12 Ω

Pin No.	35A5 Volt	35A5 Res	35Y4 Volt	35Y4 Res
1	86 VAC	72 Ω	117 VAC	97 Ω
2	12 VDC	40 KΩ	113 VAC	95 Ω
3	117 VDC	40 KΩ	0V.	INF.
4	0V.	INF.	113 VAC	95 Ω
5	0V.	0 Ω	0V.	INF.
6	0V.	520 KΩ	0V.	INF.
7	86 VDC	100 Ω	120 VDC	40 KΩ
8	48 VAC	43 Ω	86 VAC	72 Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 475-26

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: REGAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp. Phase Inverter	14F7	14F7	8AC	
2A	Power Output	35A5	35A5	6AA	Lock-in type
B	" "	35L6GT	35L6GT	7AC	Octal Type
3A	" "	35A5	35A5	6AA	
B	" "	35L6GT	35L6GT	7AC	
4A	Rectifier	35Y4	35Y4	5AL	
B	"	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REGAL PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5	10	450		UT-121	PRS150-12	BR1215	TC42	M-10-150	Filter
6	10	450		UT-121	PRS150-12	BR1215	TC42	M-10-150	"
7	8	150		UT-81	PRS150-8	BR815	TC42	M-8-150	Audio Plate Decoup.
8	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	Audio Coupling
9	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	" "
10	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
11	.1	200		TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
12	1000	200		1FM-21	1468-001	1W5D1	MC255	MO.3-21	Tone Compensation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
13A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control & AC Switch
B	Shaft			Not Req.	A	Not Req.	Attach to 13A per instructions
C	Switch			M26	41	SW-A	" " " " "
14A	500KΩ	1		MR48	D13-133	M-60-Z	Tone Control & turntable switch
B	Shaft			Not Req.	A	Not Req.	Attach to 14A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	IRC PART No.	IDENTIFICATION CODES
15	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Series Phono
16	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phono Shunt
17	3000Ω	½		BTS-3300	Or.-Blk.-Red AF Cathode
18	250KΩ	½		BTS-270K	Red-Grn.-Yl. AF Plate Load
19	250KΩ	½		BTS-270K	Red-Grn.-Yl. Phase Inverter Plate Load
20	15KΩ	½		BTS-15K	Br.-Grn.-Or. Phase Inverter Grid
21	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid
22	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. " "
23	100Ω	1		BW-1-100	Br.-Blk.-Br. Output Cathode
24	47KΩ	½		BTS-47K	Yl.-Vl.-Or. Voltage Dropping
25	500Ω	½		BTS-470	Grn.-Blk.-Br. Filter

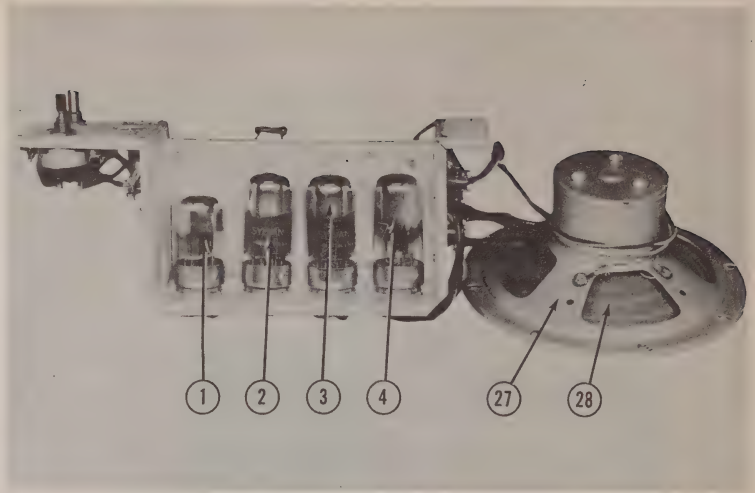
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: REGAL PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26	5000 Ω CT	5Ω	360Ω CT	.7Ω		A-3856	T2S46		

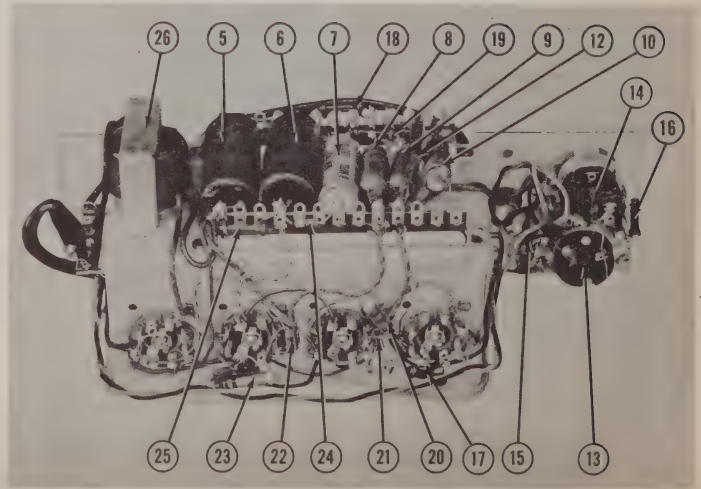
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: REGAL PART No.	JENSEN PART No.		INSTALLATION NOTES
27	FIELD PM	VC IMP. 5Ω		ST-110* Mod. P6-V		*Replace output transformer to match 3.2Ω voice coil.
28	CONE DIA. 6"	VC DIA. 5/8"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

CHASSIS—TOP VIEW

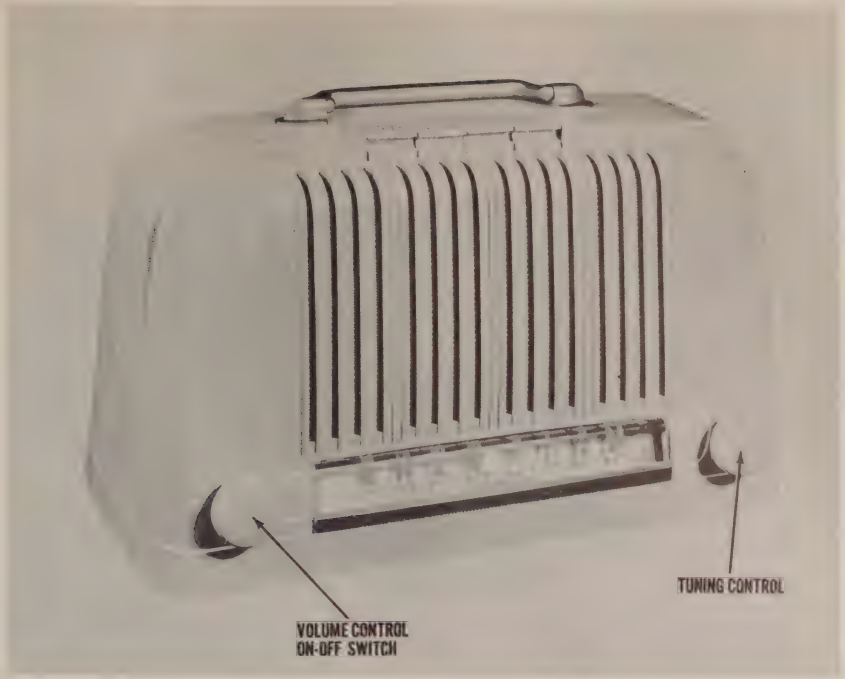


CHASSIS—BOTTOM VIEW



SILVERTONE
MODELS 6011 (CH.132.816), 6012 (CH.132.816 A)

SILVERTONE
MODELS 6011 (CH.132.816),
6012 (CH.132.816 A)



SILVERTONE
MODELS 6011 (CH.132.816),
6012 (CH.132.816 A)

SILVERTONE MODEL 6012

TRADE NAME	Silvertone, Models 6011 (Ch. 132.816), 6012 (Ch. 132.816A)
MANUFACTURER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne with Loop Ant. & Pushbutton Tuning
TUBES (FIVE)	Types, 12SA7GT/G Converter, 12SK7GT/G IF Amp., 12SQ7GT/G Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1600KC RATING .260 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect capacitor in series with the low side of the signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum volume and output of signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to pin #8 (grid) of 12SA7. Low side side to B-.	455KC	Tuning capacitor fully open	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
50 MMF.	High side to ext. ant. clip. (Remove black lead from clip.) Low side to B-.	1620KC	"	"	A5	Adjust for maximum output.
50 MMF.	"	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output. Set pointer at inverted "V" notch on lower edge of dial back plate.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE MODELS
6011 (Cn.132.816), 6012 (Cn.132.826-1)

TUBES

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT/G	12SA7GT/G	6R	
2	IF Amp.	12SK7GT/G	12SK7GT/G	6N	
3	Det.-AVC-AF	12SQ7GT/G	12SQ7GT/G	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT/G	35Z5GT/G	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	N19360	TA-240	PRSA150-40-40	BRD4215	2N514	M-2x40-150	Filter - Plain
B	20	150							" - Red
7	.05	400		TC-15	464-05	DT4S5	TP426	S-4-05	Line Filter
8	.02	400		TC-12	464-02	DT4S2	TP423	S-4-02	Output Plate Bypass
9	.002	400		TC-22	464-002	DT6D2	TP405	S-6-002	Audio Coupling
10	.002	400		TC-22	464-002	DT6D2	TP405	S-6-002	" "
11	.05	200		TC-15	464-05	DT4S5	TP426	S-4-05	AVC Filter
12	.2	400		TC-2	464-.2	DT4F2	TP429	S-4-2	Line Isolation
13	.01	200		TC-11	464-01	DT4S1	TP421	S-4-01	Ant. Isolation
14	500	500		1FM-35	1468-00005	5W5T5	MC245	M0.5-35	Audio Plate Bypass
15	250	500		1FM-325	1468-00025	5W5T25	MC240	M0.5-325	IF Bypass Vol. Cont.
16	50	500		1FM-45	1468-00005	5W5C5	MC225	M0.5-45	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	1 Meg.	1	N19390	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 17A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
18	10KΩ	½		BTS-10K	Br.-Blk.-Or. Antenna Coil Shunt
19	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AVC Network
20	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
21	330KΩ	½		BTS-330K	Or.-Or.-Yl. Line Isolation
22	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
23	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue AF Grid
24	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
25	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
26	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
27	12KΩ	1		BTA-12K	Br.-Red-Or. Bias
28	22Ω	½		BW-½-22	Red-Red-Blk. Surge Limiter
29	330Ω	½		BW-½-330	Or.-Or.-Br. Pilot Light Shunt

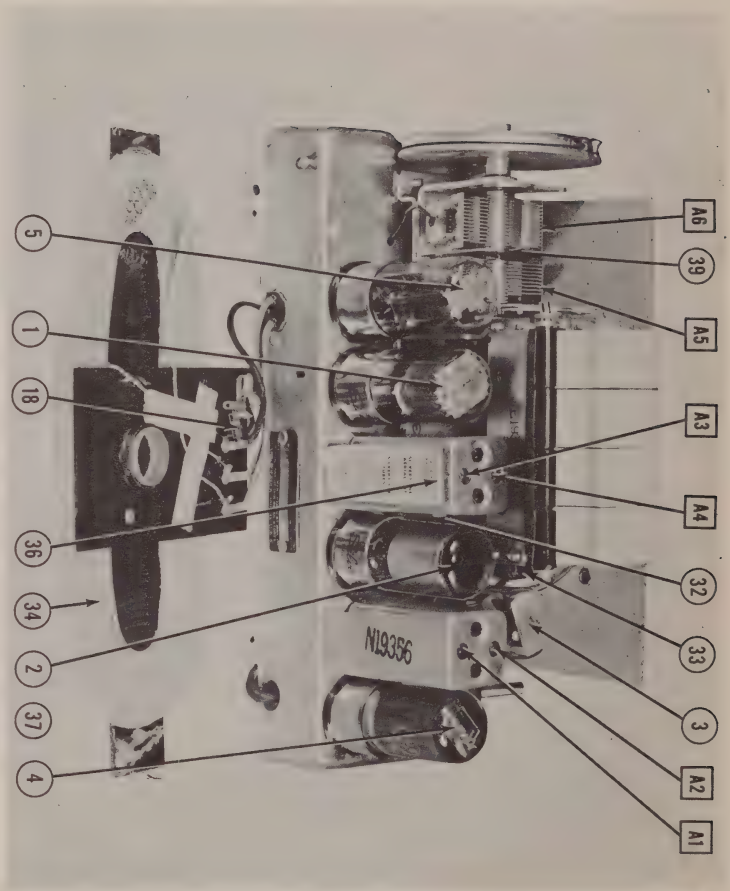
FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (@ CURRENT 1000~)	REPLACEMENT DATA: SILVERTONE PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
30	.03A	390Ω	8 Henries	N19357		T20C52	

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
31	2800Ω	3.5Ω	110Ω	.5Ω	N19358	A-3675	T22545		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SILVERTONE PART No.	JENSEN PART No.		INSTALLATION NOTES
32	FIELD PM	VC IMP. 3.5Ω	N19403	ST-113 Mod. P4-X		
33	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	MEISSNER PART No.
34	Loop Ant.	12.5Ω	1.3Ω	N19353	
35	Osc. Coil	.8Ω	6Ω	N19354	14-1040
36	Input IF	17Ω	16.5Ω	N19355	16-6658
37	Output IF	16.5Ω	16.5Ω	N19356	16-6660

DIAL LIGHT

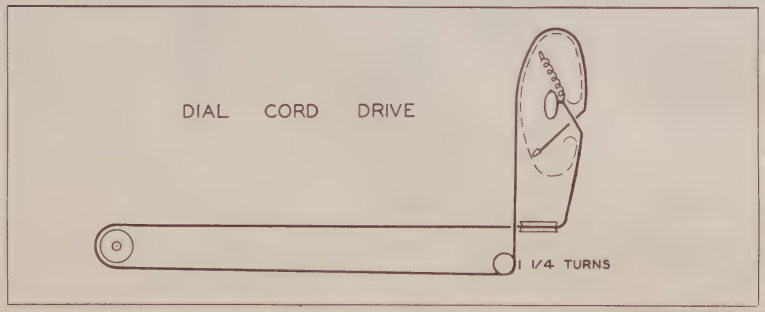
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: SILVERTONE PART No.		INSTALLATION NOTES
38	Bayonet	6-8	0.15	Brown			#47

MISCELLANEOUS

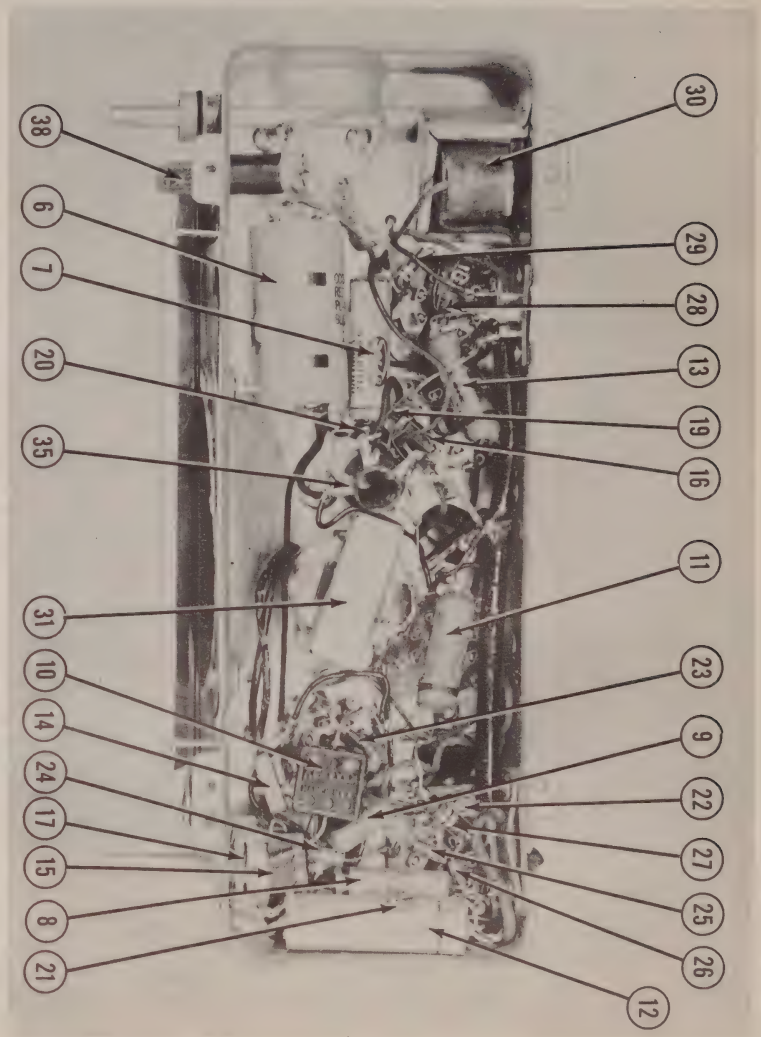
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
39	2 Gang Var. Cap Dial Scale Dial Pointer	E19359 N19341 N19407	(18-394 MMF, 34-203MMF)

PUSHBUTTON ADJUSTMENTS

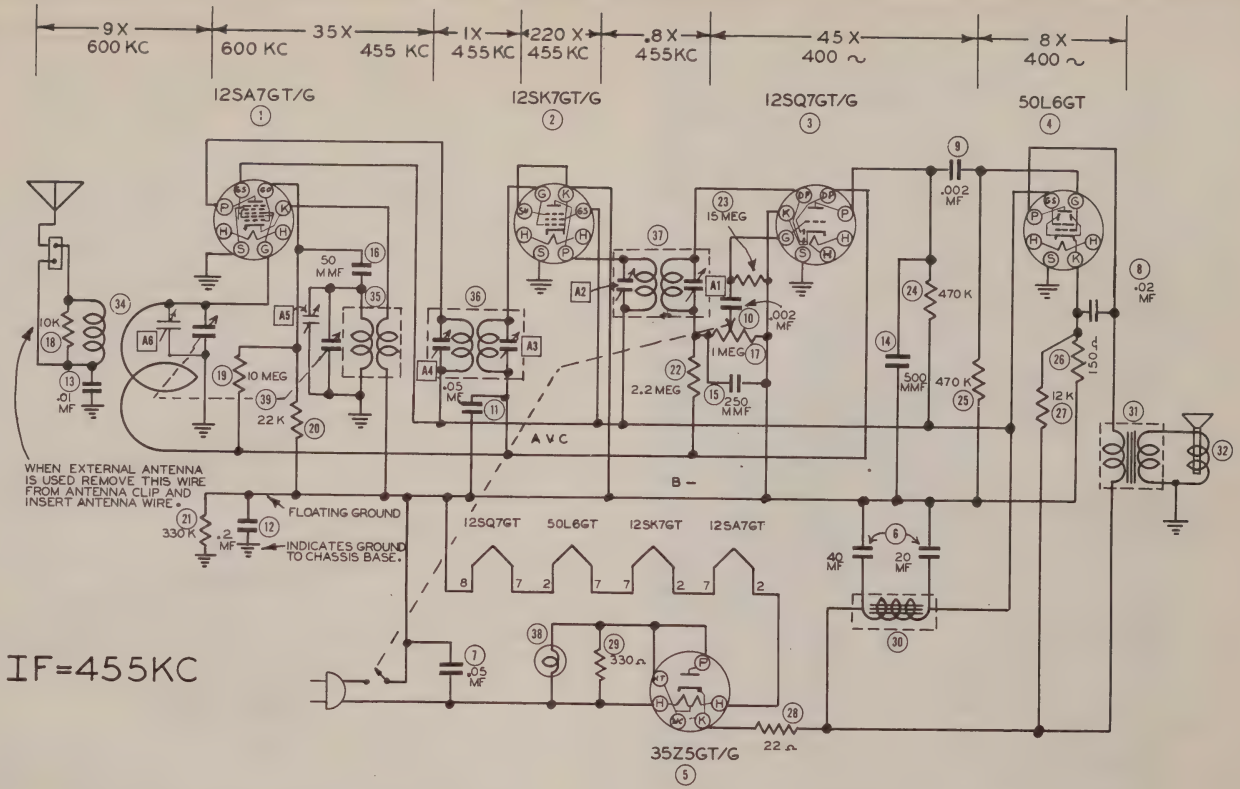
1. Turn receiver on and allow to warm up for ten or fifteen minutes.
2. Lift pushbutton to be set up and loosen locking screw.
3. With locking screw depressed completely tune in desired station carefully with manual tuning control.
4. With locking screw still completely depressed, tighten locking screw firmly.
5. Check accuracy by detuning slightly with manual tuning control and then retuning with the pushbutton. If the pushbutton is slightly off, repeat last three steps.
6. To set up remaining buttons, follow the same procedure as outlined above.



CHASSIS—BOTTOM VIEW



SILVERTONE MODELS
6011 (Ch.132.816), 6012 (Ch.132.826-1)



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT/G	0 V.	85 V. AC	110 V. DC	110 V. DC	– 4 V. DC	0 V.	74 V. AC	– 1 V. DC
2	12SK7GT/G	0 V.	74 V. AC	0 V.	– 1 V. DC	0 V.	110 V. DC	60 V. AC	110 V. DC
3	12SQ7GT/G	0 V.	– 1 V. DC	0 V.	– 1 V. DC	– 1 V. DC	70 V. DC	12 V. AC	0 V.
4	50L6GT	0 V.	60 V. AC	110 V. DC	110 V. DC	0 V.	0 V.	12 V. AC	8 V. DC
5	35Z5GT/G	0 V.	117 V. AC	113 V. AC	110 V. DC	113 V. AC	117 V. AC	85 V. AC	110 V. DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT/G	305 K Ω	75 Ω	11 K Ω	11 K Ω	19 K Ω	.6 Ω	60 Ω	2.5 MEG
2	12SK7GT/G	305 K Ω	60 Ω	0 Ω	2.5 MEG	0 Ω	11 K Ω	50 Ω	11 K Ω
3	12SQ7GT/G	305 K Ω	15 MEG.	0 Ω	900 K Ω	2.5 MEG	410 K Ω	11 Ω	0 Ω
4	50L6GT	305 K Ω	50 Ω	11 K Ω	11 K Ω	480 K Ω	0 Ω	11 Ω	130 Ω
5	35Z5GT/G	INF.	95 Ω	92 Ω	11 K Ω	92 Ω	95 Ω	75 Ω	11 K Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

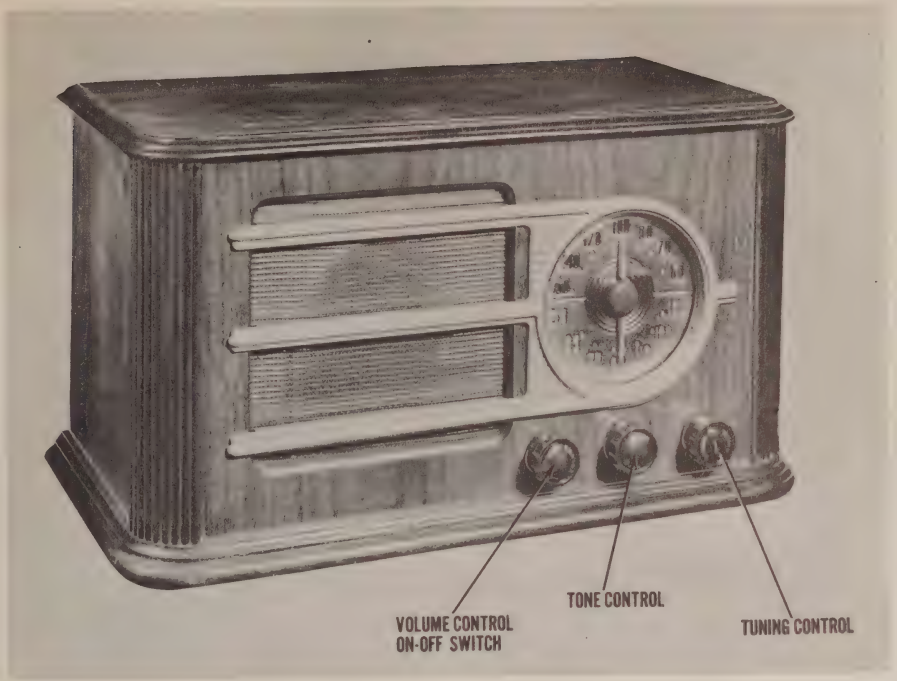
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-27

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE
MODEL 6050 (CH. 132.825-4)



SILVERTONE
MODEL 6050 (CH. 132.825-4)

SILVERTONE MODEL 6050

TRADE NAME	Silvertone, Model 6050 (Ch. 132.825-4)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7GT/G RF Amp., 12SA7GT/G Converter, 12SK7GT/G IF Amp., 12SQ7GT/G Det.-AVC-AF, 35L6GT/G Power Output, 35Z5GT/G Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1600 KC RATING .350 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control at maximum. Output of signal generator should be no higher than necessary to obtain output reading. Maintain loop in same relative position to chassis as when receiver is in cabinet. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to pin 8 (grid) 12SA7. Low side to B-.	455KC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
50MMFD.	High side to ext. ant. clip. Low side to chassis.	1400KC	1400KC	"	A5	Adjust for maximum output.
50MMFD.	"	"	Tune for maximum output.	"	A6,A7.	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT/G	12SK7GT/G	8N	
2	Converter	12SA7GT/G	12SA7GT/G	8AD	
3	IF Amp.	12SK7GT/G	12SK7GT/G	8N	
4	AVC-Det.-AF	12SQ7GT/G	12SQ7GT/G	8Q	
5	Power Output	35L6GT/G	35L6GT/G	7AC	
6	Rectifier	35Z5GT/G	35Z5GT/G	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	N19239	EL-24	AF84D4A†	UP4215	FP306†	DY-4020-150	■ Filter
B	20	150							▲ "
8	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
9	.002	600		TC-22	684-002	DT6D2	TP405	S-6-002	Tone Compensation
10	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Hum Neutralization
11	.005	600		TC-25	684-005	DT6D5	TP406	S-6-005	Audio Coupling
12	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	" "
13	.05	400		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
14	.1	400		TC-1	484-.1	DT4P1	TP428	S-4-1	Line Isolation
15	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Ant. Isolation
16	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Output Plate Bypass
17	250	500		1FM-325	1468-00025	5W5T25	MC240	M0.5-325	Audio Plate Bypass
18	250	500		1FM-325	1468-00025	5W5T25	MC240	M0.5-325	IF Bypass Vol. Cont.
19	100	500		1FM-31	1468-0001	5W5T1	MC235	M0.5-31	Osc. Grid Capacitor

†Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
20A	500KΩ	1	N19529	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 20A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
21A	500KΩ	1	N19967	MR48	D13-133	M-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 21A per instructions

RESISTORS

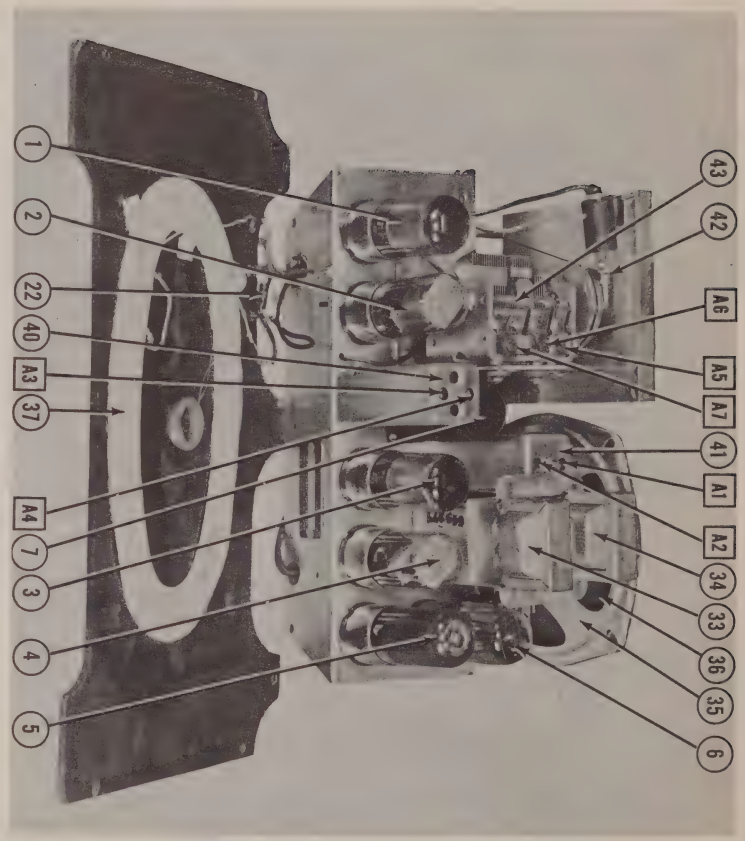
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
22	10KΩ	1/4		BTS-10K	Br.-Blk.-Or. Antenna Coil Shunt
23	330KΩ	1/4		BTS-330K	Or.-Or.-Yl. Line Isolation
24	3300Ω	1/4		BTS-3300	Or.-Or.-Red Parasitic Suppressor
25	22KΩ	1/4		BTS-22K	Red-Red-Or. Oscillator Grid
26	2.2 Meg.	1/4		BTS-2.2 Meg.	Red-Red-Grn. AVC Network-See Note 1
27	2.2 Meg.	1/4		BTS-2.2 Meg.	Red-Red-Grn. " "
28	6.8 Meg.	1/4		BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
29	470KΩ	1/4		BTS-470K	Yl.-Vi.-Yl. AF Plate Lead
30	150Ω	1/4		BW-½-150	Br.-Grn.-Br. Output Cathode
31	12KΩ	1		BTA-12K	Br.-Red-Or. Bias Bleeder
32	15Ω	1/4		BW-½-15	Br.-Grn.-Blk. Rectifier Ballast

Note 1 - Some models use 6.8 Meg. in this application.

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: SILVERTONE PART NO.	STANCOR PART NO.	THORDARSON PART NO.	INSTALLATION NOTES
33	.041A	215Ω	8.5 Henries	N18583	C-1723	T20C52‡	‡Cut bracket and spread to mount replacement.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
34	2050Ω	3.05Ω	110Ω	.38Ω	N18532	A-3678	T22545		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.		
35	FIELD PM	VC IMP. 3.05Ω	N18550	ST-107* Mod.P5-V		*Fabricate new mounting bracket.
36	CONE DIA. 5-5/32"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

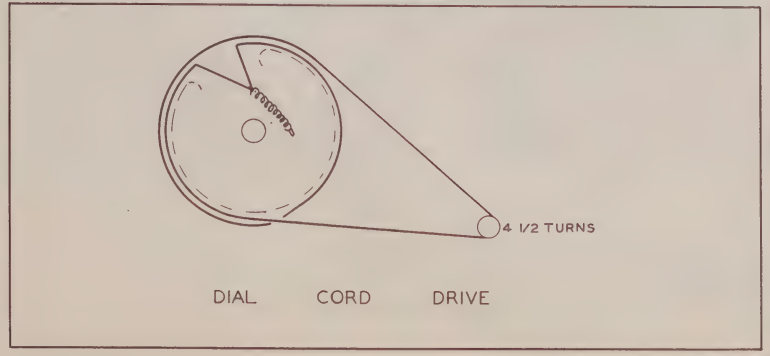
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
37	Loop Ant.	12.5Ω	.8Ω	N19516		
38	RF Coil	4.5Ω	9.5Ω	N19860		
39	Osc. Coil	1Ω	10.5Ω	N18580	14-1040	
40	Input IF	16.5Ω	16.5Ω	N21009	16-6666	
41	Output IF	12.5Ω		N18578		

DIAL LIGHT

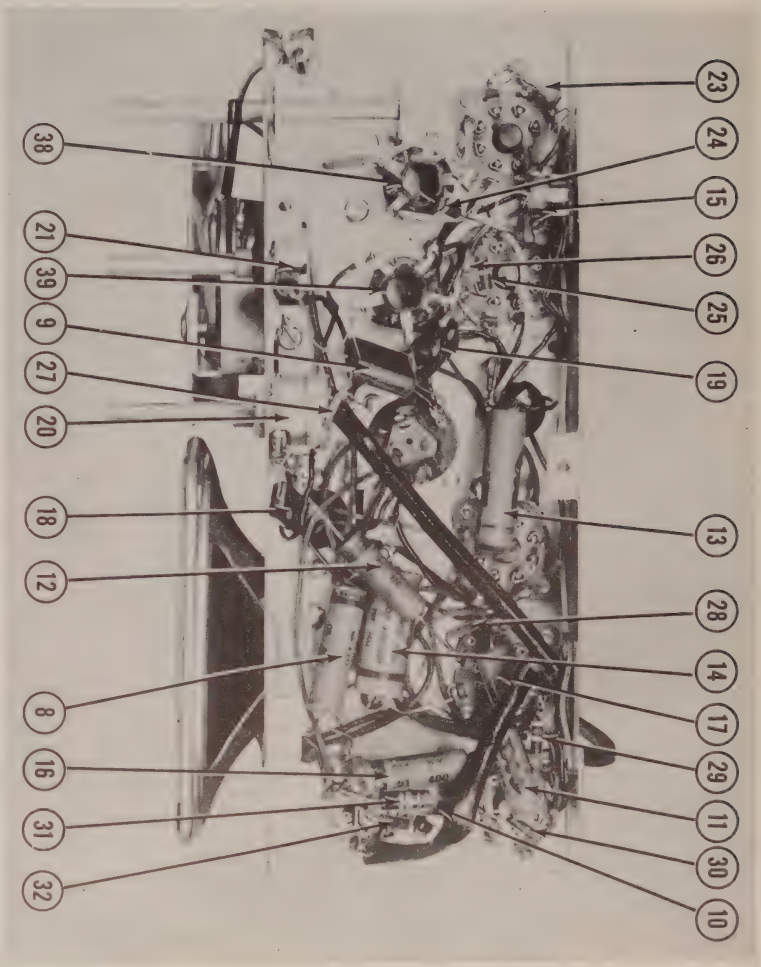
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SILVERTONE PART No.		
42	Screw	120	.05				Type C7

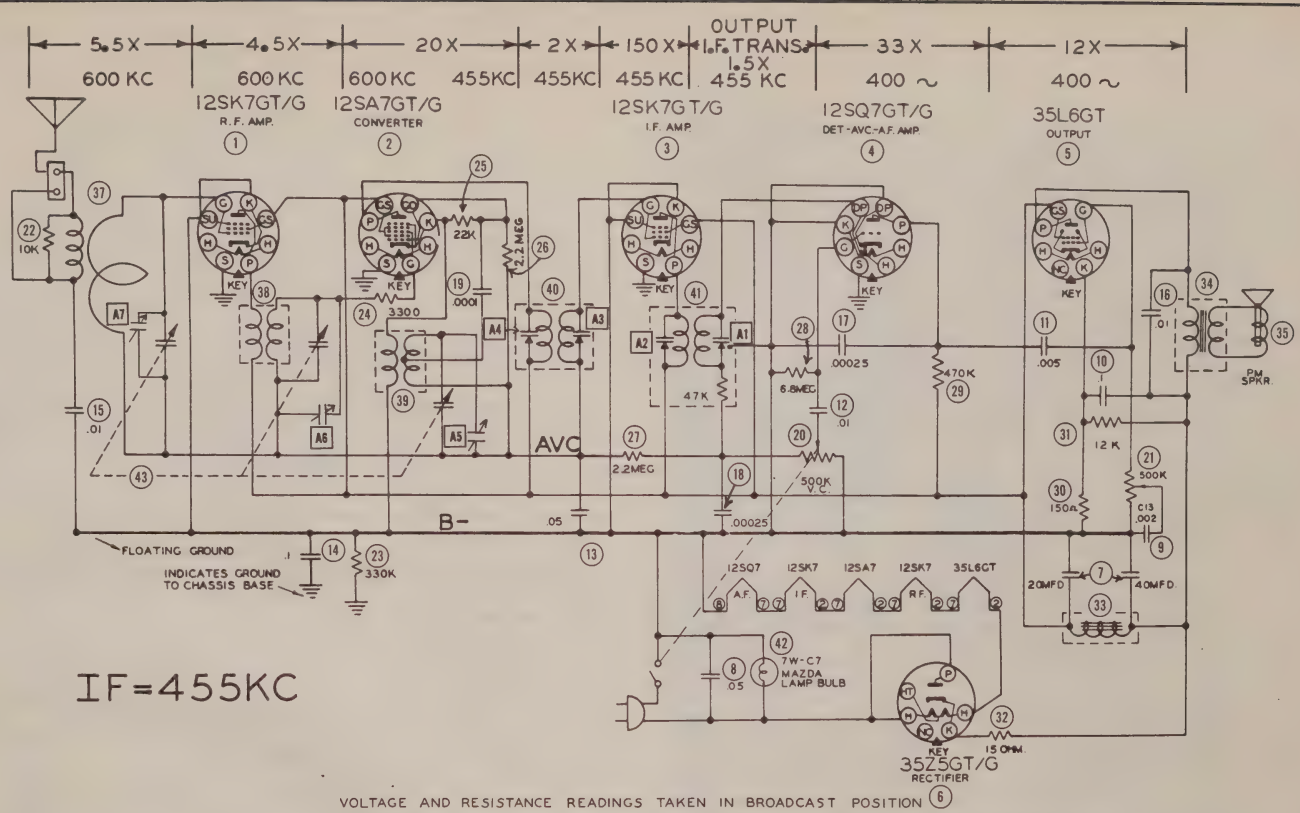
MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
43	3 Gang Var. Cap	N18564	(38-514MMF, 16-252MMF, 13-92MMF)
	Dial Scale	N19533	
	Dial Pointer	N19226	
	Escutcheon	N19512	Dial Crystal Included



CHASSIS—BOTTOM VIEW





VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION (6)

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT/G	0V.	48V.AC	0V.	-1.7V.DC	0V.	110V.DC	36V.AC	110V.DC
2	12SA7GT/G	0V.	36V.AC	110V.DC	110V.DC	-7 V.DC	0V.	24V.AC	-1.7V.DC
3	12SK7GT/G	0V.	24V.AC	0V.	-1.7V.DC	0V.	110V.DC	13V.AC	110V.DC
4	12SQ7GT/G	0V.	-1.2V.DC	0V.	-1V.DC	0V.	48V.DC	13V.AC	0V.
5	35L6GT/G	0V.	82V.AC	120V.DC	110V.DC	0V.	0V.	48V.AC	6.8V.DC
6	35Z5GT/G	0V.	117V.AC	110V.AC	145V.DC	117V.AC	0V.	82V.AC	150V.DC

RESISTANCE READINGS

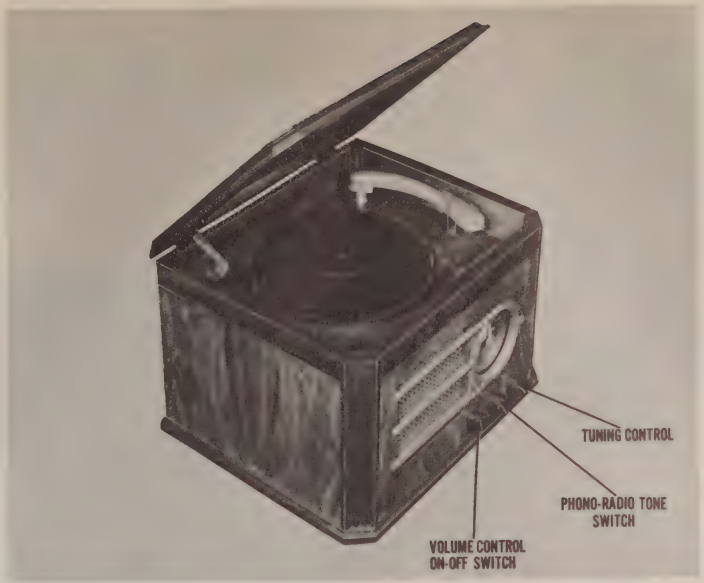
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT/G	320KΩ	45Ω	0Ω	1MEG.	0Ω	10 KΩ	35Ω	10 KΩ
2	12SA7GT/G	320 KΩ	35Ω	10 KΩ	10 KΩ	30 KΩ	23Ω	24Ω	1.2 MEG.
3	12SK7GT/G	320 KΩ	24Ω	0Ω	1MEG.	0Ω	10 KΩ	13Ω	10 KΩ
4	12SQ7GT/G	320 KΩ	6 MEG.	0Ω	450 KΩ	0Ω	480 KΩ	13Ω	0Ω
5	35L6GT/G	INF.	78Ω	10KΩ	10 KΩ	500 KΩ	0Ω	45Ω	150Ω
6	35Z5GT/G	INF.	109Ω	100Ω	10 KΩ	109Ω	INF.	78Ω	10 KΩ

475-28

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE
MODEL 6071 (CH. 132.826-1)



SILVERTONE
MODEL 6071 (CH. 132.826-1)

SILVERTONE MODEL 6071

TRADE NAME	Silvertone, Model 6071 (Ch. 132.826-1)
SUPPLIER	Sears, Roebuck Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC Operated Radio-Phono Combination-Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 12SK7GT/G RF Amp., 12SA7GT/G Converter, 12SK7GT/G IF Amp., 12SQ7GT/G Det.-AVC-AF, 35L6GT/G Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

RATING .350 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Maintain loop in same relative position to chassis as when receiver is in cabinet. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to Pin 8 (grid) 12SA7. Low side to B-.	455KC	Tuning cap open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
50MMFD.	High side to ext. ant. clip. Low side to chassis.	1400KC	1400KC	"	A5	Adjust for maximum output.
50MMFD.	"	"	Tune for maximum output.	"	A6,A7.	" " " "

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type knobs from front of cabinet.
2. Remove seven screws holding loop ant. to rear of cabinet.
3. Remove phono motor plug from chassis.
4. Remove phono pick-up plug from chassis.
5. Remove four Phillips head chassis mounting bolts from under cabinet.
6. Remove chassis out back of cabinet.
7. Remove five screws holding shield at bottom of chassis. Remove shield.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MUSITRON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Phase Inv.	7N7	7N7	8AC	
2	Power Output	7C5	7C5	6AA	
3	" "	7C5	7C5	6AA	
4	Rectifier	7Z4	7Z4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MUSITRON PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5	40	350		EL-4	PRS450-40	BR4045	TC78	M-40-450	Filter
6A	8	450		UT-88	PRSA450-8-8	BRL8845	2N518	M-2x8-450	" - Red
B	8	450							" - "
7	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	Audio Coupling
8	.02	400		TC-12	484-02	DT4S2	TP423	S-4-02	" "
9	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Tone Compensation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MUSITRON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
10A	500KΩ	1		MR50	D11-133	M-58-S	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 10A per instructions
11A	100KΩ	1		MR39	D13-128	M-51-Z	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 11A per instructions

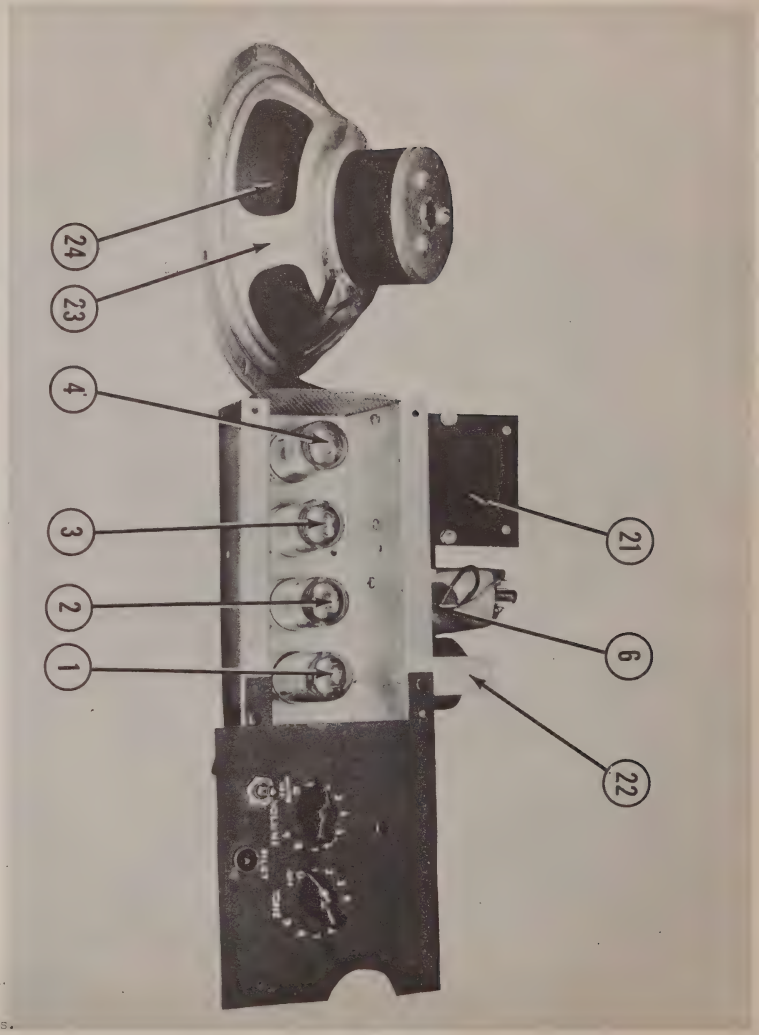
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MUSITRON PART No.	IRC PART No.	IDENTIFICATION CODES
12	900Ω	1		BTA-620	White-Blk.-Br. AF Cathode
13	68KΩ	½		BTS-68K	Blue-Gray-Br. AF Plate Load
14	68KΩ	½		BTS-68K	Blue-Gray-Or. Phase Inverter Plate Load
15	15KΩ	½		BTS-15K	Br.-Grn.-Or. Phase Inverter Grid
16	270KΩ	½		BTS-270K	Red-Vi.-Yl. Output Grid
17	240KΩ	½		BTS-220K	Red-Yl.-Yl. Output Grid
18	18KΩ	½		BTS-18K	Br.-Gray-Or. Voltage Dropping
19	200Ω	2		BT-2-220	Red-Blk.-Br. Output Cathode
20	2000Ω	10		AB-2000	Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MUSITRON PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
21	117V AC @ .58A	600V CT @ .088A	6.3V AC @ 2.7A			P-6312†	T22R31	†Use universal mounting brackets.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MUSITRON PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
22	14000Ω CT	7.4Ω	340Ω CT	.8Ω		A-3823	T22S48*		*Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MUSITRON PART No.	JENSEN PART No.		
23	FIELD PM	VC IMP. 7.4Ω		ST-104 Mod. P8-S		
24	CONE DIA. 7-½"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

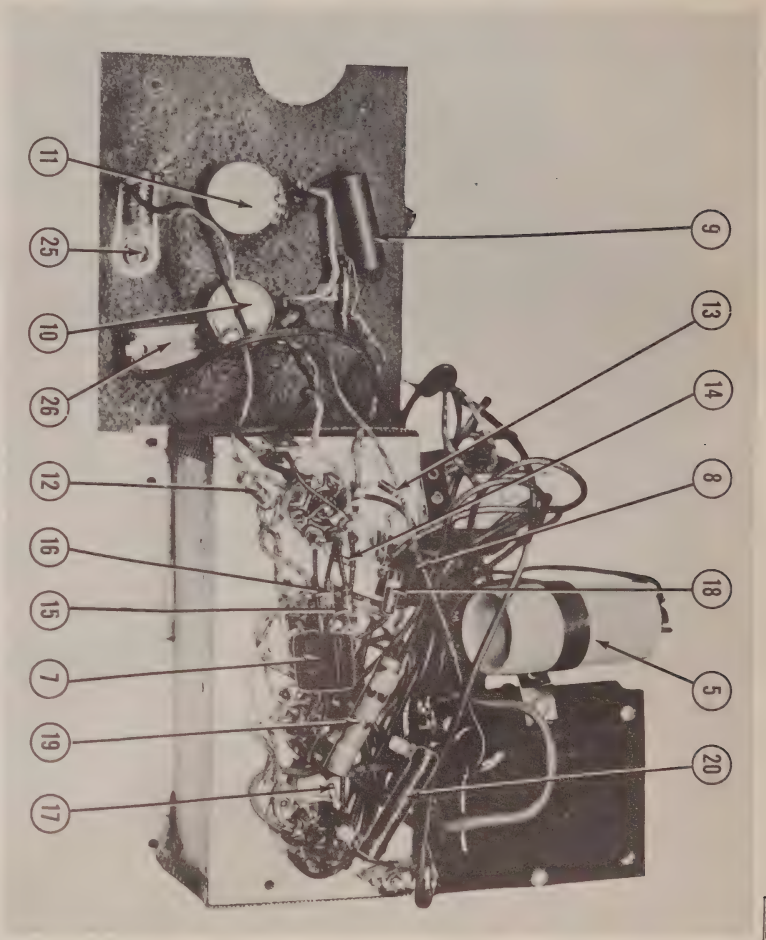
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MUSITRON PART No.		
25	Screw	6-8	0.25	Blue			Type 46

MISCELLANEOUS

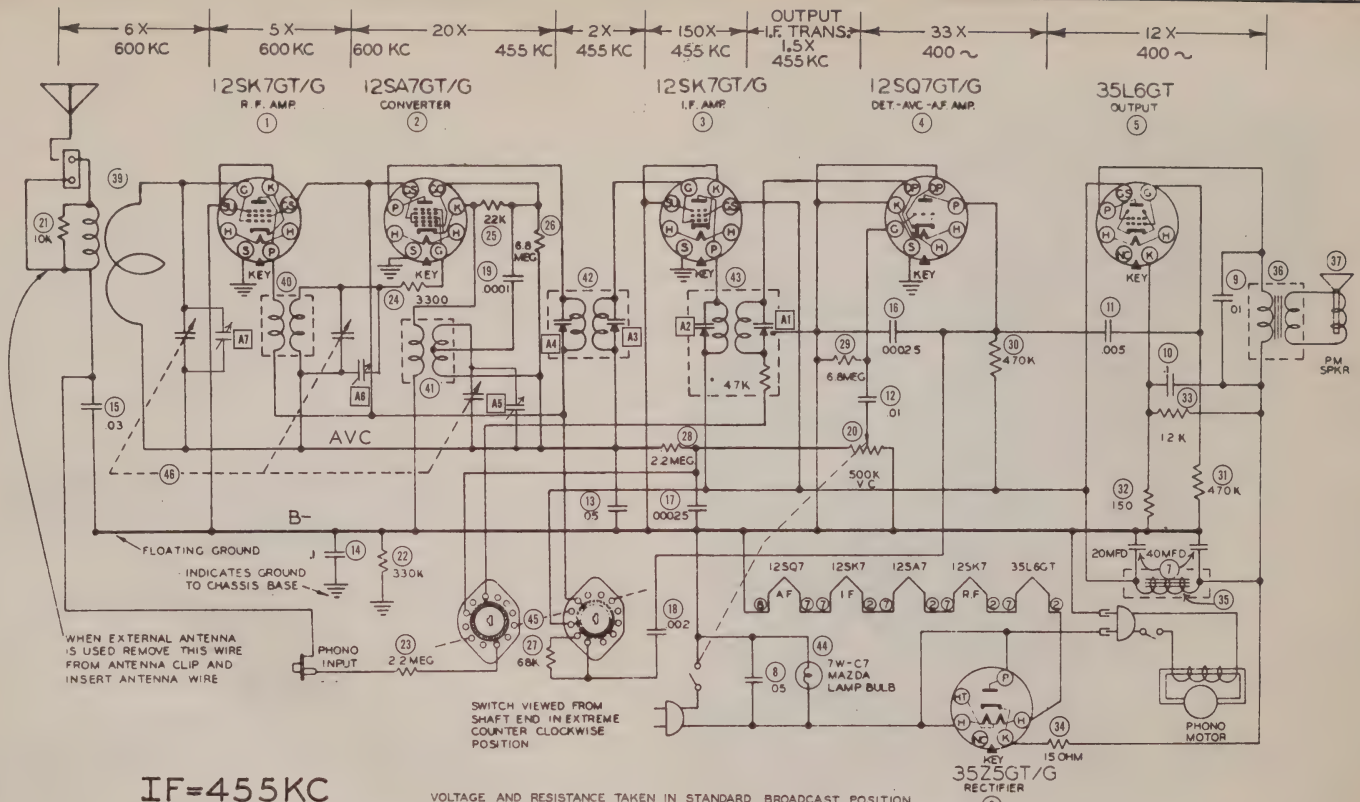
ITEM No.	PART NAME	MUSITRON PART No.	NOTES
26	Switch		On-Off

CHASSIS—BOTTOM VIEW



MUSITRON MODEL PT-10

MUSITRON MODEL PT-10



IF=455KC

VOLTAGE AND RESISTANCE TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT/G	0V.	50V.AC	0V.	-3.8V.DC	0V.	125V.DC	36V.AC	125V.DC
2	12SA7GT/G	0V.	36V.AC	125V. DC	125V.DC	-6.3V.DC	0V.	25V.AC	-3V.DC
3	12SK7GT/G	0V.	25V.AC	0V.	-3.8V.DC	0V.	125V.DC	14V.AC	125V.DC
4	12SQ7GT/G	0V.	-3V.DC	0V.	-1V.DC	0V.	70 V.DC	14V.AC	0V.
5	35L6GT/G	0V.	78V.AC	135V.DC	125V.DC	0V.	0V.	50V.AC	8V.DC
6	35Z5GT/G	0V.	117V.AC	110V.AC	130 V.DC	117V.AC	0V.	78 V.AC	135V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT/G	290 K Ω	40 Ω	0 Ω	1.8MEG.	0 Ω	12 K Ω	31 Ω	12 K Ω
2	12SA7GT/G	290 K Ω	31 Ω	12 K Ω	12 K Ω	20K Ω	1 Ω	21 Ω	1.8MEG.
3	12SK7GT/G	290 K Ω	21 Ω	0 Ω	1.8MEG.	0 Ω	12 K Ω	12 Ω	12 K Ω
4	12SQ7GT/G	290 K Ω	6 MEG.	0 Ω	520 K Ω	0 Ω	450 K Ω	12 Ω	0 Ω
5	135L6GT/G	INF.	60 Ω	12 K Ω	12 K Ω	410 K Ω	0 Ω	40 Ω	140 Ω
6	35Z5GT/G	INF.	80 Ω	75 Ω	12 K Ω	80 Ω	0 Ω	60 Ω	12K Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-29

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

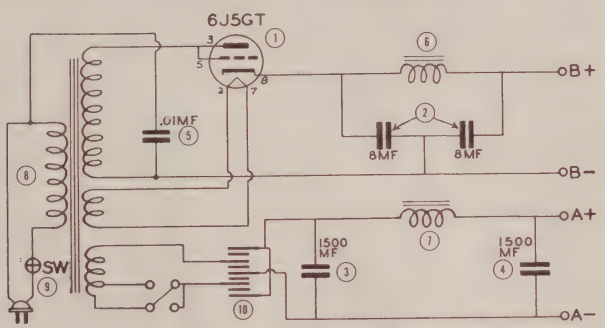
SILVERTONE
"POWR SHIFTER" 6685 (CH. 139. 150-1)

SILVERTONE "POWR SHIFTR" 6685(Ch. 139.150-1)

TRADE NAME	Silvertone "POWR SHIFTR" Model 6685 (Ch. 139.150), (139.150-1).
MANUFACTURER	Sears, Roebuck & Co., 925 So. Homan St., Chicago, Ill.
TYPE SET	AC Operated Power Supply for 1½ Volt Battery Radios of 4, 5, or 6 Tubes
TUBES (ONE)	Type 6J5GT
OPERATING VOLTAGE	110-120 Volts AC

OUTPUT RATINGS

	"A" Output	"B" Output
4-5 Tube	1.50 V @ 200 MA 1.35 V @ 250 MA	90 V @ 13 MA 101 V @ 8.5 MA 135 V @ 0 MA
6 Tube	1.55 V @ 300 MA 1.35 V @ 350 MA	



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6J5GT	0V.	*	100V.AC	0V.	100 V.AC	88 V.AC	*	112 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6J5GT	INF.	∓	205Ω	INF.	205Ω	INF.	∓	110 KΩ

* 6.5 V DC BETWEEN PINS 2 AND 7. ∓ 17Ω BETWEEN PINS 2 AND 7.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS 475-30

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
1	Rectifier	6J5GT	6J5GT	6Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	
2A	8	150	J2037	TA-88	PRSA150-8-8	BRL8815	2N816	M-2X20-150	Filter - Red
B	8	150							" - Blue
3	1500	3	J2036	UHC1500		BRH615		DGM-1500-6	"
4	1500	3	J2036	UHC1500		BRH615		DGM-1500-6	"
5	.01	400	J1060	TC-11	484-01	DT4S1	TP421	S-4-01	Line Filter

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000)	SILVERTONE PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
6	13 MA	550 Ω	6.5 Henries	J1061	C-1707 *	T-20C52 *	*Drill new mounting holes.
7	300 MA	1.7 Ω	.096Henries	J1063			

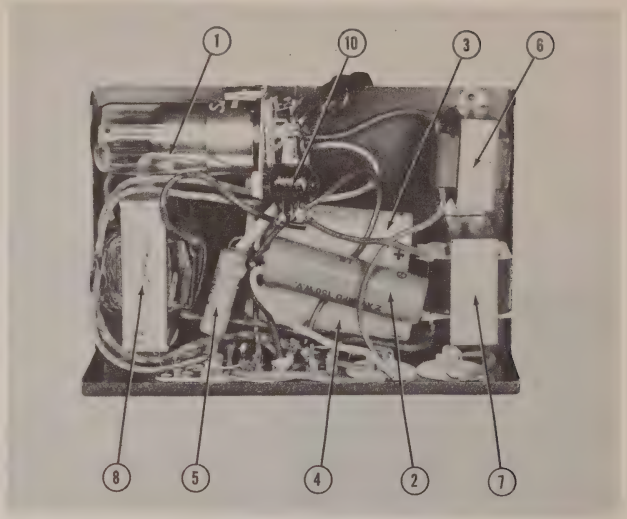
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SILVERTONE PART No.	STANCOR PART No.	THORDARSON PART No.	
8	117V AC @ .1A	95V AC @ .013A	6.5V AC @ .3A	2.6V AC tapped @ 2.3V AC @ .375A. AC	J1059			

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
9	Switch	J5538	Includes line cord and plug.
10	Rectifier	J2933	Dry Disc Type

CHASSIS—BOTTOM VIEW



IMPORTANT - READ CAREFULLY

The "A" supply of this power unit is supplied through a dry disc rectifier. If the radio ceases to operate or drops off in performance, it may be due to a chemical change in this rectifier. This may cause the "A" voltage to drop low enough to affect the performance of the receiver.

To reactivate the rectifier it is only necessary to short (connect together) the "A" plus and "A" minus of plug or terminals of socket for a period of 4 minutes. The high temperature developed in the rectifier during this period has the tendency to restore the discs to their normal rectifying capacity. The unit will not be harmed by this process.

This deactivated condition is more likely to occur in the rectifier when the power unit has been out of service for some length of time (4 months or more).

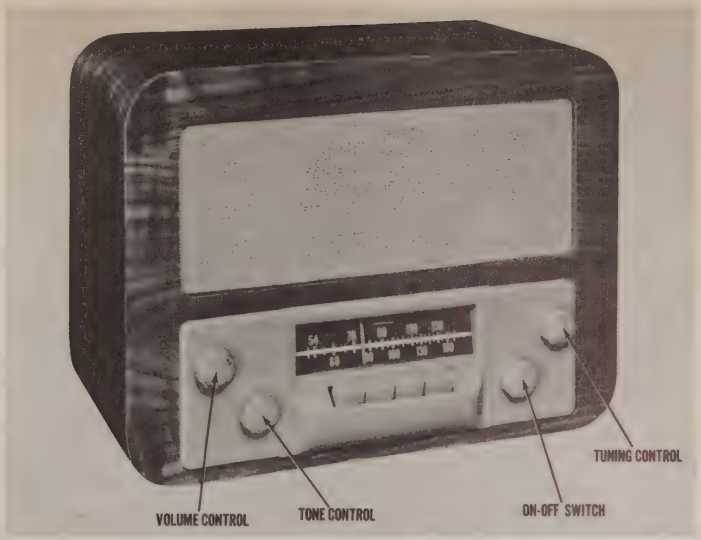
EXCESSIVE HUM

When excessive hum is noticed in the radio it may be due to the "A" supply or the "B" supply. The hum will be very loud when the input condenser C2 opens in service and this open condenser will cause the output voltage to drop to 1.35 volts without load (4-5 tube position). The hum will be somewhat less in volume if the second section or output condenser has opened and this will not change the output voltage.

When the hum is caused by the "B" supply, the condensers of this filter circuit have probably opened. If the input condenser has opened the output voltage will drop to approximately 110 volts without load. Less hum is caused when the output condenser opens and the output voltage is not changed.

To determine whether the hum is introduced by the "A" supply or the "B" supply, batteries may be substituted for each separate supply while one circuit is being tested.

SILVERTONE
MODEL 7054 (CH. 101.808)



SILVERTONE MODEL 7054

TRADE NAME	Silvertone, Model 7054 (Ch. 101.808)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne with Loop Ant. & Pushbutton Tuning
TUBES (SIX)	Types, 7B7 RF Amp., 14Q7 Converter, 7B7 IF Amp., 7C6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	535-1650KC RATING .260 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Maintain loop in same relative position to chassis as when receiver is in cabinet. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 6 (grid) 14Q7. Low side to B-.	455KC	Tuning cap closed.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD	High side to ext. ant. term. Low side to chassis.	1500KC	1500KC	"	A5	Adjust for maximum output.
200MMFD	"	"	Tune for maximum output.	"	A6,A7.	Adjust for maximum output. Repeat last three steps until no increase in output is obtained.

PUSHBUTTON ADJUSTMENTS

1. Turn on receiver and allow it to warm up for about 15 minutes.
2. Remove the pushbutton to be set up and loosen set screw in the pushbutton lever one to one and a half turns.
3. Push the pushbutton lever in all the way and accurately tune in desired station with manual tuning control.
4. With lever still pushed in completely tighten set screw firmly.
5. Check accuracy of setting by detuning with manual tuning control and retuning with pushbutton. If the setting is off repeat last three steps.
6. Replace pushbutton.
7. For remaining pushbuttons follow the same procedure as outlined above.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE MODEL 7254 (Ch. 1U1.808)

TUBES

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7B7	7B7	8V	
2	Converter	14Q7	14Q7	8AL	
3	IF Amp.	7B7	7B7	8V	
4	Det.-AVC-AF	7C6	7C6	8W	
5	Power Output	50A5	50A5	6AA	
6	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	R60416	EL-340	AF88DA4	UP6CJ44	FP357	DY-305	■ Filter
B	40	150							▲ "
C	20	25							Cath. Bypass
8	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Line Filter
9	.02	600		TC-12	684-02	DT6S2	TP412	S-6-02	Output Plate Bypass
10	.05	600		TC-15	684-05	DT6S5	TP415	S-6-05	Tone Compensation
11	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
12	.1	200		TC-1	484-1	DT4P1	TP428	S-4-1	Line Isolation
13	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
14	.01	400		TC-11	484-01	DT4S1	TP421	S-4-01	Tone Compensation
15	.005	600		TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
16	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	RF Bypass Pwr. Supp.
17	.05	200		TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
18	.01	600		TC-11	684-01	DT6S1	TP410	S-6-01	Fixed Padder
19	.001	600		TC-21	684-001	DT6D1	TP404	S-6-001	Ant. Coupling
20	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Audio Plate Bypass
21	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Osc. Grid Capacitor
22	100	500		1FM-31	1468-0001	5W5T1	MC235	MO.5-31	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23	2 Meg.	1	R60430				Volume Control

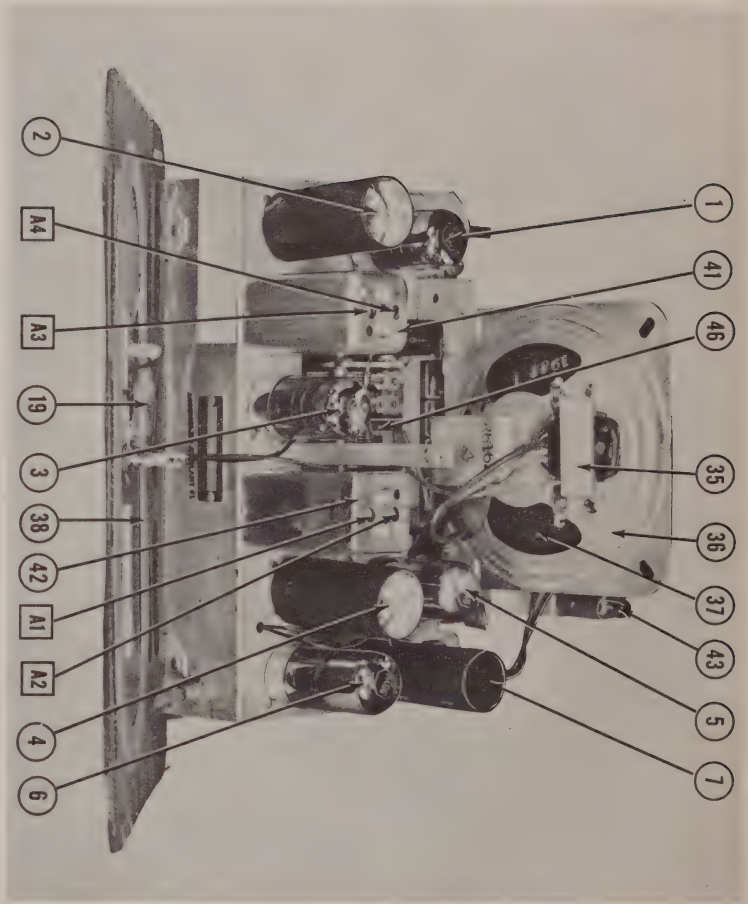
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
24	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
25	22KΩ	1/3		BTS-22K	Red-Red-Or. Oscillator Grid
26	470Ω	1/3		BTS-470	Yl.-Vi.-Br. Parasitic Suppressor
27	2.2 Meg.	1/3		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
28	47KΩ	1/3		BTS-47K	Yl.-Vi.-Or. Tone Compensation
29	4.7 Meg.	1/3		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
30	2.2 Meg.	1/3		BTS-2.2 Meg.	Red-Red-Grn. AF Plate Load
31	470KΩ	1/3		BTS-470K	Yl.-Vi.-Yl. Output Grid
32	150Ω	1/3		BW-1-150	Br.-Grn.-Br. Output Cathode
33	1200Ω	1		BTA-1200	Br.-Red-Red Filter
34	25Ω	1		BW-1-27	Red-Grn.-Blk. Surge Limiter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
35	2500Ω	2.8Ω	225Ω tapped @ 9Ω	1Ω	R60675	A-3876*			*Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	SILVERTONE PART No.	JENSEN PART No.		
36A B	PM	2.8Ω	R61627 R60431			Alternate Speaker
	CONE DIA.	VC DIA.				
37A B	5-1/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT. R60674			Cone for Speaker R60431

R F COILS

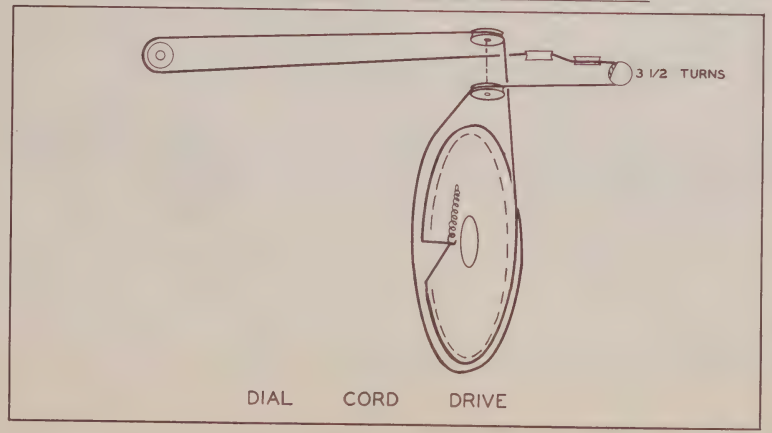
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
38	Loop Ant.	.2Ω	2.1Ω	R60549		
39	RF Coil	2Ω	15Ω	R60465		
40	Osc. Coil		4.1Ω	R60448		
41	Input IF	10.5Ω	11Ω	R60417	16-6658	
42	Output IF	14Ω		R60418	16-6670	Add 220KΩ from low side sec. to b-.

DIAL LIGHT

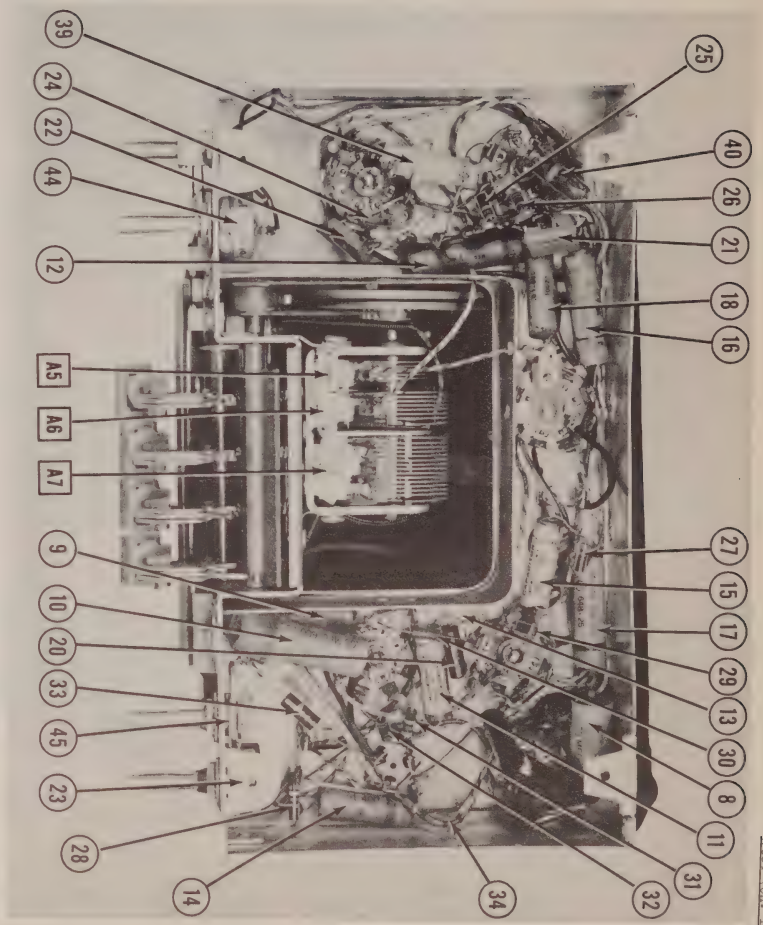
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SILVERTONE PART No.		
43	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

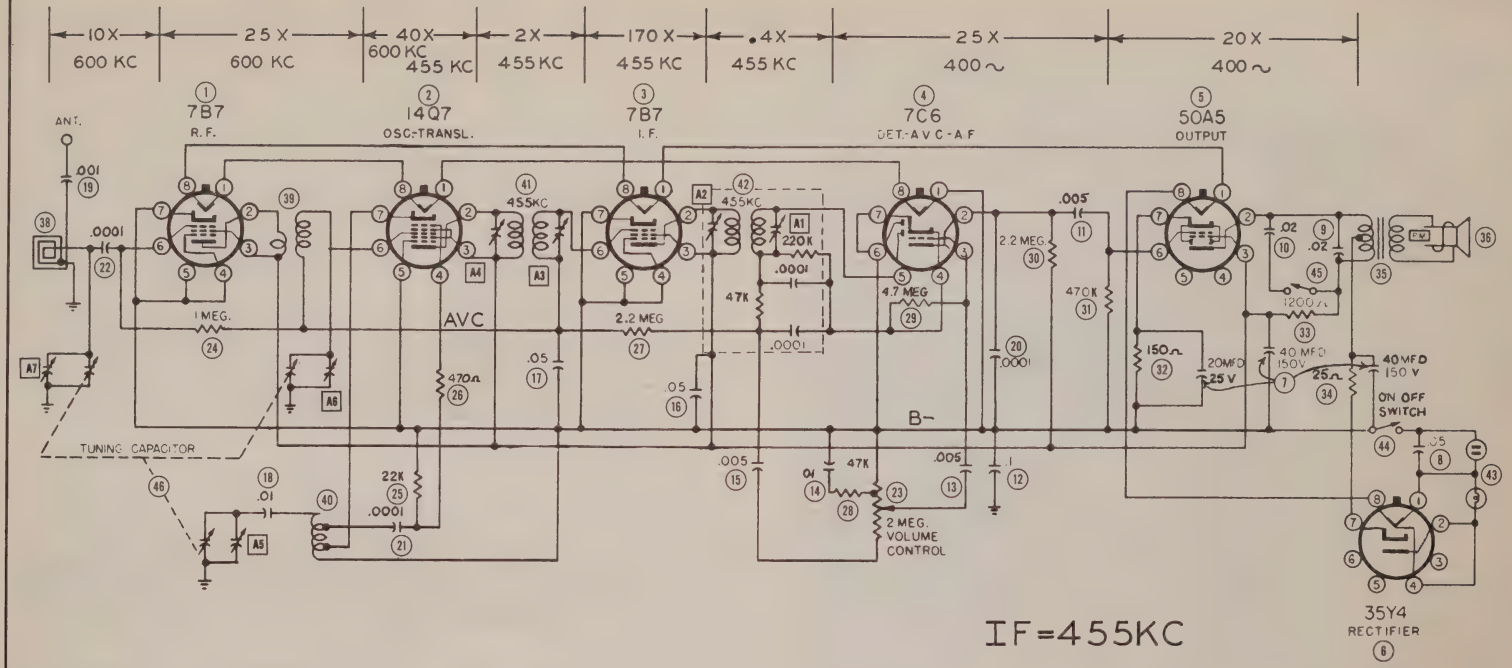
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
44	Switch	R60432	On-Off
45	"	R60447	Tone
46	3 Gang Var. Cap	R60413	(17-507MMF, 13-250MMF, 13-88MMF)
	Dial Pointer	R60580	
	Dial	R60579	



CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 7054 (CH. 101.306)



IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	22 V AC	85 V DC	85 V DC	0 V.	0 V.	-1 V DC	0 V.	28 V AC
2	14Q7	7.2 V AC	85 V DC	85 V DC	-4.5 V DC	0 V.	-1 V DC	0 V.	22 V AC
3	7B7	36 V AC	85 V DC	85 V DC	0 V.	0 V.	-1 V DC	0 V.	28 V AC
4	7C6	0 V.	50 V DC	-1 V DC	0 V.	0 V.	0 V.	0 V.	7.2 V AC
5	50A5	36 V AC	115 V DC	85 V DC	0 V.	0 V.	5 V DC	70 V AC	
6	35Y4	117 V AC	113 V AC	INF.	113 V AC	0 V.	INF.	120 V DC	70 V AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	18 Ω	70 KΩ	70 KΩ	0 Ω	0 Ω	3 MEG.	0 Ω	26 Ω
2	14Q7	8 Ω	70 KΩ	70 KΩ	30 KΩ	0 Ω	2 MEG.	0 Ω	18 Ω
3	7B7	30 Ω	70 KΩ	70 KΩ	0 Ω	0 Ω	2 MEG.	0 Ω	26 Ω
4	7C6	0 Ω	2.5 MEG.	5 MEG.	0 Ω	175 KΩ	0 Ω	0 Ω	8 Ω
5	50A5	30 Ω	70 KΩ	70 KΩ	INF.	280 KΩ	400 KΩ	150 Ω	80 Ω
6	35Y4	100 Ω	97 Ω	INF.	97 Ω	0 Ω	INF.	70 KΩ	80 Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

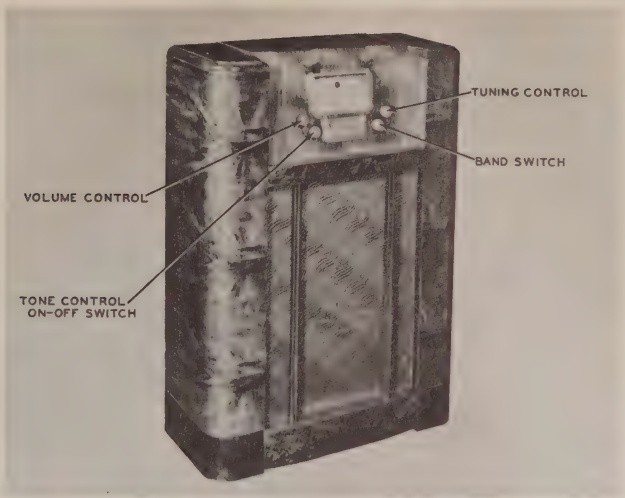
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-31

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE
MODEL 7090 (CH.101.810)



SILVERTONE MODEL 7090

TRADE NAME	Silvertone, Model 7090 (Ch. 101.810)
MANUFACTURER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne with Loop Ant. and Pushbutton Tuning
TUBES (SIX)	Types, 7B7 RF Amp., 14Q7 Converter, 7B7 IF Amp., 7C6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC — RATING .240 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1650KC — **SHORT WAVE** 5.7-16.8MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn variable fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Maintain loop in same relative position to chassis as when receiver is in cabinet. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #6 (grid) of 14Q7. Low side to B-.	455KC	BC	Tuning cap. closed	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200MMFD	High side to ext. ant. clip. Low side to chassis.	1500KC	"	1500KC	"	A5	Adjust for maximum output
200MMFD	"	"	"	Tune for maximum output.	"	A6,A7	" " " "
200MMFD	"	600KC	"	"	"	A8	Rock variable and adjust for maximum output. Repeat last three steps.
400Ω	"	15MC	SW	15MC	"	A9	Adjust for maximum output
400Ω	"	"	"	Tune for maximum output.	"	A10,A11	Rock variable and adjust for maximum output.

PUSHBUTTON ADJUSTMENTS

1. Turn on receiver and allow it to warm up for about 15 minutes.
2. Remove pushbutton to be set up and loosen set screw in the pushbutton lever 1 to 1½ turns.
3. Push the pushbutton lever in all the way and accurately tune in desired station with manual tuning control.
4. With lever still pushed in completely tighten set screw firmly.
5. Check accuracy of setting by detuning with manual tuning control and retuning with pushbutton. If setting is off repeat last three steps.
6. Replace pushbutton.
7. For remaining pushbuttons follow the same procedure as outlined above.

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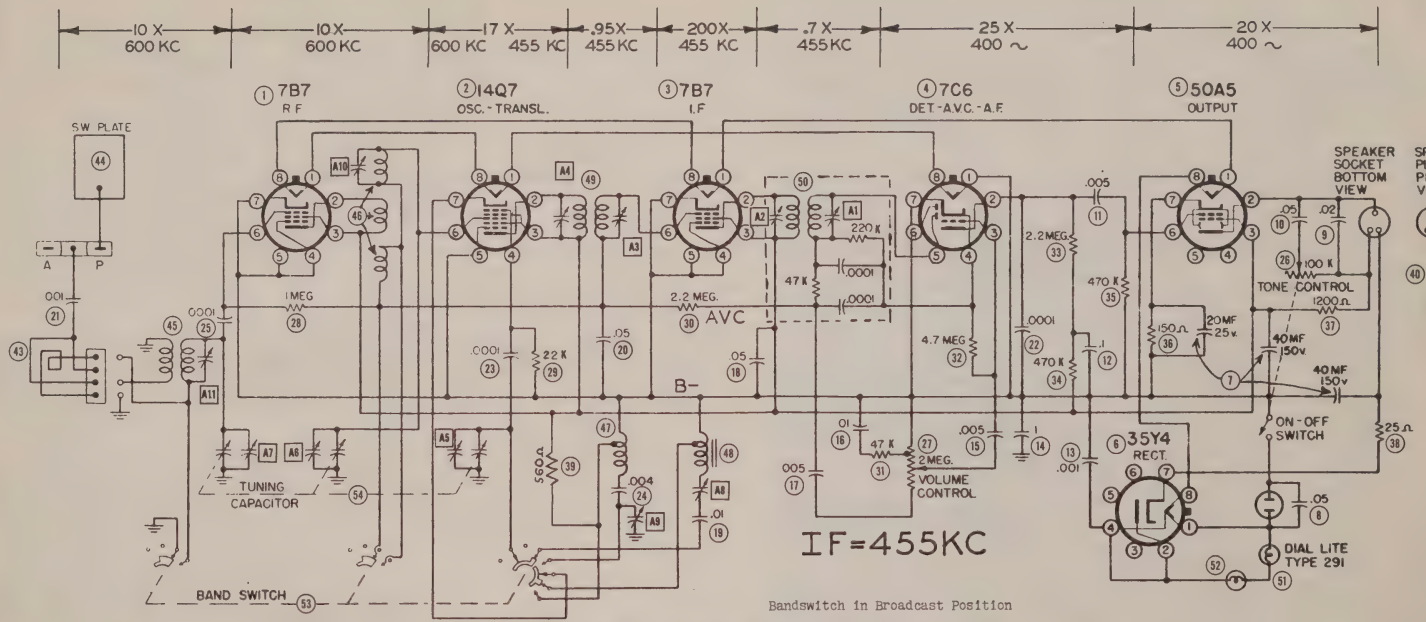


Bandswitch in Broadcast Position

NOTE: VOLTAGE & RESISTANCE TAKEN IN STANDARD BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	20 V.AC	75 V.DC	75 V.DC	0 V.	0 V.	-8 V.DC	0 V.	28 V.AC
2	14Q7	6 V.AC	75 V.DC	75 V.DC	-5 V.DC	0 V.	-1 V.DC	0 V.	20 V.AC
3	7B7	33 V.AC	75 V.DC	75 V.DC	0 V.	0 V.	-1 V.DC	0 V.	28 V.AC
4	7C6	0 V.	30 V.DC	-1 V.DC	0 V.	-8 V.DC	0 V.	0 V.	6 V.AC
5	50A5	33 V.AC	108 V.DC	75 V.DC	62 V.DC	0 V.	0 V.	5 V.DC	85 V.AC
6	35Y4	117 V.AC	113 V.AC	0 V.	113 V.AC	0 V.	0 V.	122 V.DC	85 V.AC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

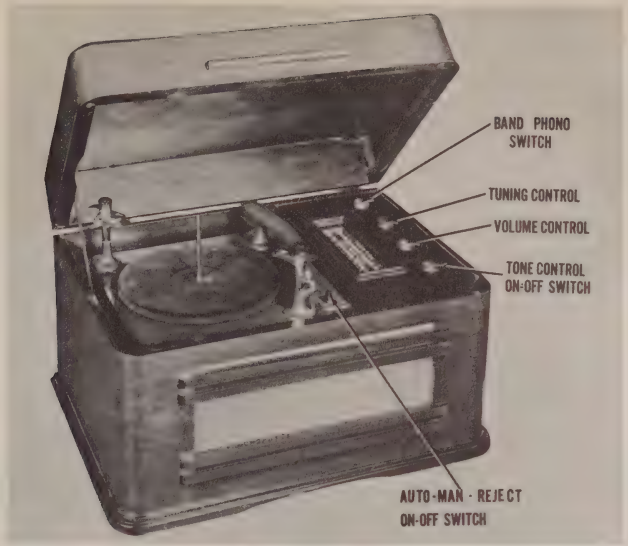
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7B7	19 Ω	100 KΩ	100 KΩ	0 Ω	0 Ω	3.5 MEG.	0 Ω	25 Ω
2	14Q7	8 Ω	100 KΩ	100 KΩ	20 KΩ	0 Ω	2.5 MEG.	2 Ω	19 Ω
3	7B7	31 Ω	100 KΩ	100 KΩ	0 Ω	0 Ω	2.5 MEG.	0 Ω	25 Ω
4	7C6	0 Ω	2.5 MEG.	3.5 MEG.	0 Ω	160 KΩ	0 Ω	0 Ω	8 Ω
5	50A5	31 Ω	100 KΩ	100 KΩ	665 KΩ	2.2 MEG.	490 KΩ	140 Ω	80 Ω
6	35Y4	103 Ω	100 Ω	INF.	100 Ω	0 Ω	INF.	100 KΩ	80 Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-32

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



SPARTON MODEL 6AW26PA

TRADE NAME	Sparton, Model 6AW26PA		
MANUFACTURER	Sparks-Withington Co., Jackson, Michigan		
TYPE SET	AC Operated Combination Phono - Radio Superheterodyne - Self Contained Loop Ant.		
TUBES (SIX)	Types, 6A8GT Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, (2) 6K6GT Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	110-120 Volts AC	RATING	.520 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC	SHORT WAVE	5.7-18.3MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning cap fully closed and set pointer to end of white line at low freq. end of dial. When aligning, maintain loop in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	456KC	BC	Tuning cap open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
200MMFD	High side to ext. ant. lead. Low side to chassis.	1500KC	"	1500KC	"	A5	" " " "
200MMFD	"	1400KC	"	Tune for maximum output.	"	A6	" " " "
200MMFD	"	600KC	"	"	"	A7	Rock variable and adjust for maximum output. Repeat last three steps until no further increase can be obtained.
400Ω	"	15MC	SW	15MC	"	A8	Adjust for maximum output
"	"	"	"	Tune for maximum output.	"	A9	" " " "

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type knobs from top of chassis.
2. Remove one screw holding loop ant. Remove loop antenna.
3. Remove pick-up jack from chassis.
4. Remove phono-motor plug from receptacle.
5. Remove speaker plug from chassis.
6. Remove three Phillips head screws holding chassis board to cabinet. Remove chassis and mounting board through bottom of cabinet.
7. Remove four bolts holding chassis to chassis mounting board. Remove mounting board.
8. Remove four hex nuts holding speaker. Remove speaker.

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PARTS LIST AND DESCRIPTIONS

SPARTON MODEL 6AW26PA

TUBES

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6A8GT	6A8GT	8A	
2	IF Amp.	7A7	7A7	8V	
3	Det.-AVC-AF	7B6	7B6	8W	
4	Power Output	6K8GT/G	6K8GT/G	7S	
5	Power Output	6K8GT/G	6K8GT/G	7S	
6	Rectifier	5Y3GT/G	5Y3GT/G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	10	450	PA4300-5	EL-312	AF44J4A	UF6CJ47	FP339	DY-316	▲ Filter
B	15	450							■ "
C	15	25							Bias Filter *
8	.001	1000	PC40GN-102	TR-21	1084-001	MD16D1	TP455	TM-10-001	Output Plate Bypass
9	.02	600	PC40GM-203	TC-12	684-02	DT6S2	TP412	S-6-02	Tone Compensation
10	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	Audio Coupling
11	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	" "
12	.01	200	PC40GK-103	TC-11	484-01	DT4S1	TP421	S-4-01	" "
13	.1	400	PC40GL-104	TC-1	484-.1	DT4P1	TP428	S-4-1	Screen Bypass
14	.1	600	PC40GM-104	TC-1	684-.1	DT6P1	TP418	S-6-1	RF Bypass Pwr. Supp.
15	.05	600	PC40AM-503	TC-15	684-05	DT6S5	TP415	S-6-05	AVC Filter
16	100	500	MC60G-101	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Audio Plate Bypass
17	240	500	MC60G-241	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Diode Filter
18	100	500	MC60G-101	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	" "
19	240	500	MC60G-241	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Osc. Feedback
20	51	500	MC60E-510	1FM-45	1468-00005	5W5Q5	MC225	MO.5-45	Osc. Grid Capacitor
21	2575	500	PA4354-3						Padder

*This section may not be used in all models.

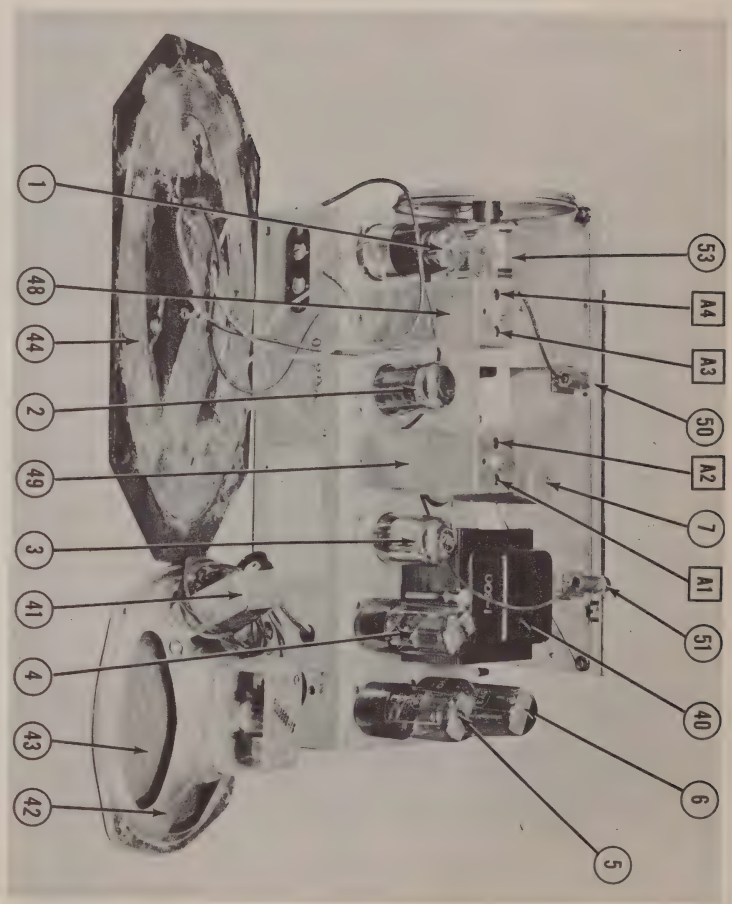
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	500KΩ	1	PA4400-5	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		"	M26	41	SW-A	" " " " "
23A	500KΩ	1	PA4402-1	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 23A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	IDENTIFICATION CODES
24	51KΩ	½	BR12G-513	BTS-47K	Grn.-Br.-Or. Oscillator Grid
25	22KΩ	½	BR12G-223	BTS-22K	Red-Red-Or. Oscillator Anode Load
26	47KΩ	1	CR12G-473	BTA-47K	Yl.-Vi.-Or. Bleeder
27	22KΩ	2	DR12G-223	BT-2-22K	Red-Red-Or. Screen Dropping
28	3.3 Meg.	½	BR12S-335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
29	27KΩ	½	BR12S-273	BTS-27K	Red-Vi.-Or. Diode RF Filter
30	470KΩ	½	BR12G-474	BTS-470K	Yl.-Vi.-Yl. Series Phono
31	10 Meg.	½	BR12S-106	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
32	270KΩ	½	BR12S-274	BTS-270K	Red-Vi.-Yl. AF Plate Load
33	470KΩ	½	BR12G-474	BTS-470K	Yl.-Vi.-Yl. Output Grid
34	470KΩ	½	BR12G-474	BTS-470K	Yl.-Vi.-Yl. Output Grid
35	2000Ω	½	CR12G-202	BTS-2200	Red-Blk.-Red Output Screen Load
36	15Ω	½	BR12S-150	Bw-½-15	Br.-Grn.-Blk. Bias
37	220Ω	1	CR12G-221	BW-1-220	Red-Red-Br. Bias
38	100Ω	½	BR12S-101	BW-½-100	Br.-Blk.-Br. Bias
39	2700Ω	2		BT-2-2700	Red-Vi.-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SPARTON PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
40	117V AC @ .82A	640V CT @ .07A	5.1V AC @ 1.8A	6.2V AC @ 2.0A	AB44002-1	P-6120*	T22R02‡	*Mount vertically with universal mounting brackets. ‡Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SPARTON PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
41	8000Ω CT	3.5Ω	500Ω CT	.6Ω	Part of PC63000-16	A-3823	T22S47‡		‡Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SPARTON PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-108		
42	PM	3.5Ω	PC63000-16	Mod. P6-X		
	CONE DIA.	VC DIA.				
43	6-1/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

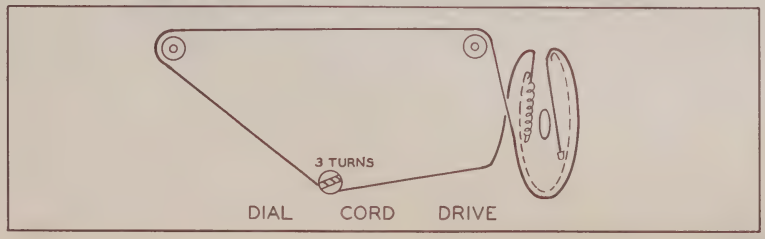
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	SPARTON PART No.	MEISSNER PART No.
44	Loop Ant.	.1Ω	.8Ω	AB43014-1	
45	SW Ant. Coil	.7Ω	0Ω	AA6751-1	14-1044
46	BC Osc. Coil		5.6Ω	AA6752-1	
47	SW Osc. Coil		0Ω	AA6753-1	14-1046
48	Input IF	14.5Ω	10Ω	AA6800-3	16-6658
49	Output IF	6Ω	6Ω	AA6800-2	16-6660

DIAL LIGHT

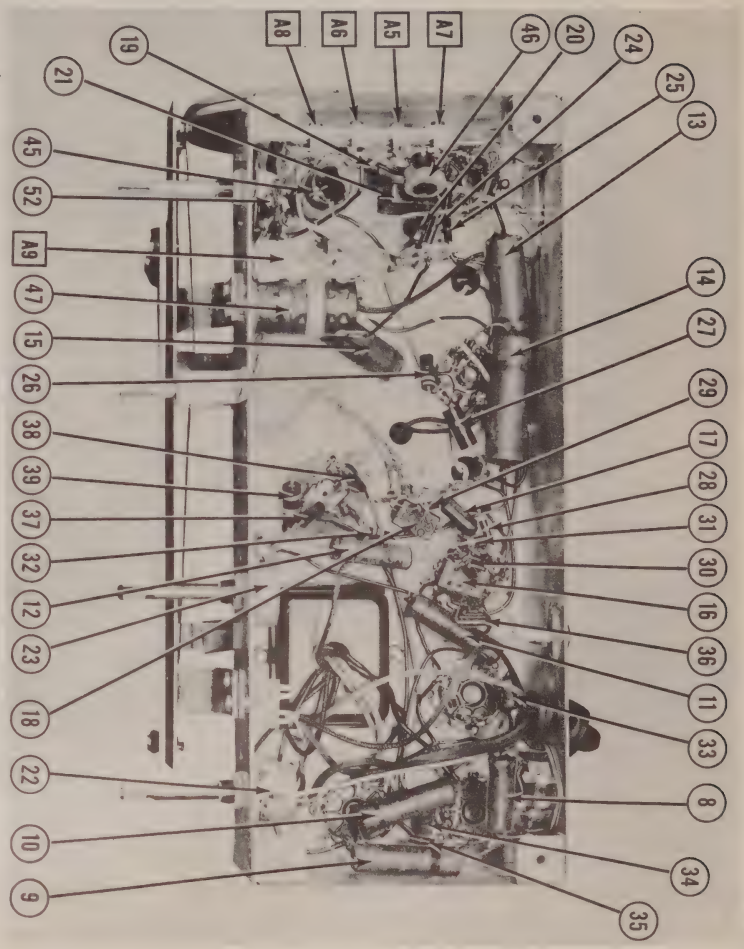
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SPARTON PART No.		
50	Bayonet	7.5	0.20	White	PA4101		Type 51
51	"	7.5	0.20	"	PA4101		" 51

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
52	Switch		Radio Band-Phono
53	2 Gang Var. Cap	PB40403	(15-451 MMF each section)

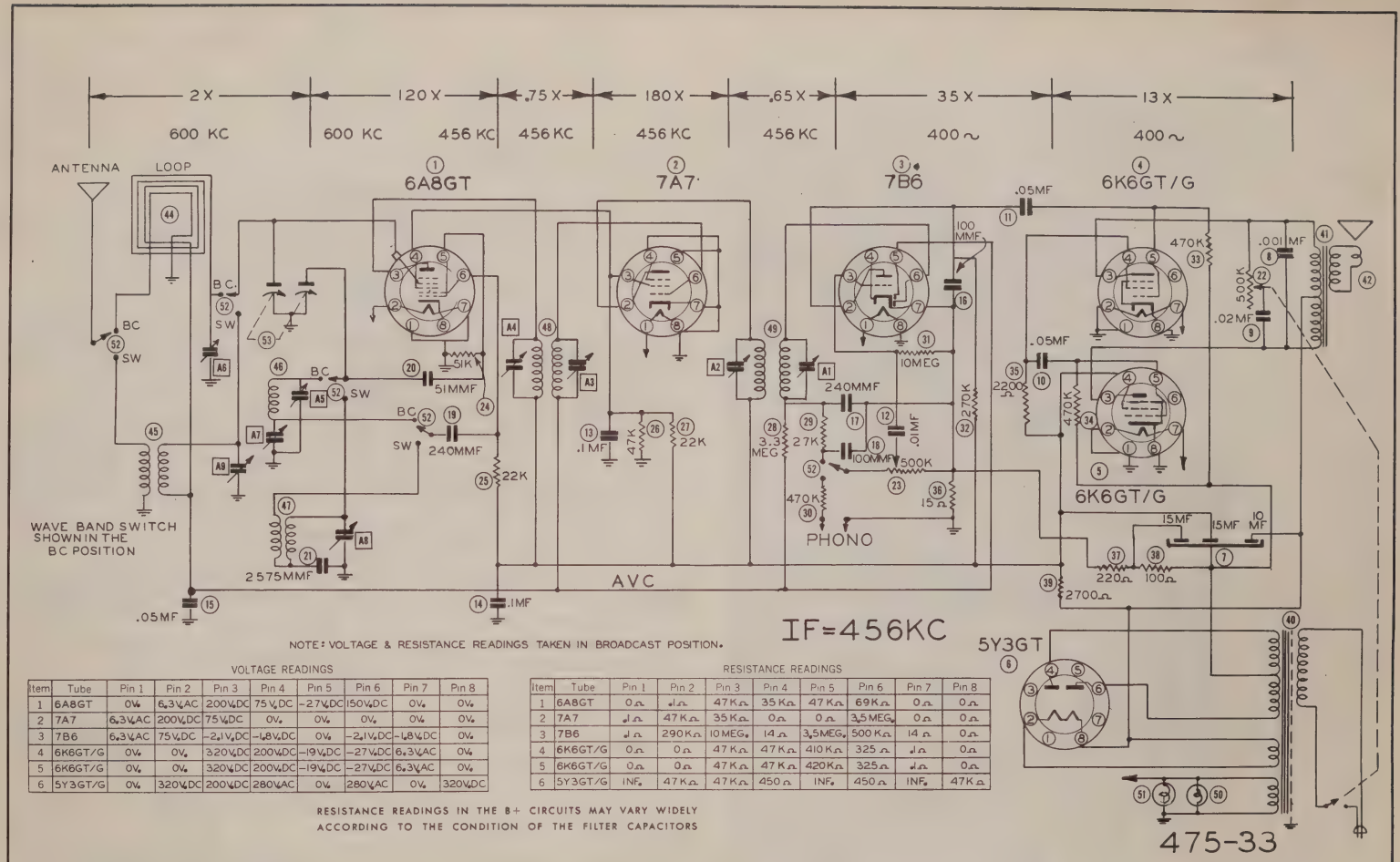


CHASSIS—BOTTOM VIEW



SPARTON MODEL 6AW26PA

SPARTON MODEL 6AW26PA



NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6A8GT	0V.	6.3V.AC	200V.DC	75V.DC	-27V.DC	150V.DC	0V.	0V.
2	7A7	6.3V.AC	200V.DC	75V.DC	0V.	0V.	0V.	0V.	0V.
3	7B6	6.3V.AC	75V.DC	-2.1V.DC	-1.8V.DC	0V.	-2.1V.DC	-1.8V.DC	0V.
4	6K6GT/G	0V.	0V.	320V.DC	200V.DC	-19V.DC	-27V.DC	6.3V.AC	0V.
5	6K6GT/G	0V.	0V.	320V.DC	200V.DC	-19V.DC	-27V.DC	6.3V.AC	0V.
6	5Y3GT/G	0V.	320V.DC	200V.DC	280V.AC	0V.	280V.AC	0V.	320V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6A8GT	0Ω	∞Ω	47KΩ	35KΩ	47KΩ	69KΩ	0Ω	0Ω
2	7A7	∞Ω	47KΩ	35KΩ	0Ω	0Ω	3.5MEG.	0Ω	0Ω
3	7B6	∞Ω	290KΩ	10MEG.	14Ω	3.5MEG.	500KΩ	14Ω	0Ω
4	6K6GT/G	0Ω	0Ω	47KΩ	47KΩ	410KΩ	325Ω	∞Ω	0Ω
5	6K6GT/G	0Ω	0Ω	47KΩ	47KΩ	420KΩ	325Ω	∞Ω	0Ω
6	5Y3GT/G	INF.	47KΩ	47KΩ	450Ω	INF.	450Ω	INF.	47KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SPARTON MODEL 10BW76PA

TRADE NAME	Sparton, Model 10BW76PA (Ch. 10-76PA)
MANUFACTURER	Sparks-Withington Co., Jackson, Michigan.
TYPE SET	AC Operated FM-AM Automatic Phono-Radio Combination Superheterodyne-Loop Ant.
TUBES (TEN)	Types, 6SG7 RF Amp., 7Q7 Converter, 6SK7GT IF Amp. (FM-AM), 6SK7GT 2nd IF Amp. (FM), 6E5 Tuning Eye, 6SJ7GT 1st Limiter, 6SJ7GT 2nd Limiter, 6S8GT Det.-AVC-AF (FM-AM), 6V6GT/G Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-117 Volts AC RATING .900 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC SHORT WAVE 5.5-18.3MC FM 88-108MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer to end of calibration scale at left end of dial. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading.

When aligning FM oscillator and RF sections connect two 150Ω carbon resistors in series with the signal generator output leads and the FM dipole terminals. Use insulated alignment screwdriver for making adjustment.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 6 (grid) 7Q7. Low side to chassis.	456KC	BC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
200MMFD.	High side to ext. ant. lead. Low side to chassis.	1500KC	"	1500KC	"	A5	" " " "
200MMFD.	"	"	"	Tune for maximum output.	"	A6,A7.	" " " "
200MMFD.	"	600KC	"	"	"	A8	Rock variable and adjust for maximum output. Repeat last three steps until no further increase in output is obtained.
400Ω	"	15MC	SW	15MC	"	A9	Adjust for maximum output
400Ω	"	"	"	Tune for maximum output.	"	A10,A11	Rock variable and adjust for maximum output.
400Ω	"	6MC	"	"	"	A12	" " " " Repeat last three steps until no further increase in output is obtained.
Do not attempt alignment of the FM Band unless a vacuum tube voltmeter is available for use as an output indicator.							
.1 MFD.	High side to pin 6 (grid) of 7Q7. Low side to chassis.	10.7MC (Modulation off.)	FM	300	VTVM connected to pin #4 of 2nd limiter (7) and chassis	A13,A14 A15,A16 A17,A18 A19.	Adjust for maximum output with minimum input from from signal generator.
.1 MFD.	High side to pin 4 (grid) of 6SJ7 (6) 1st limiter. Low side to chassis.	"	"	"	VTVM across disc. diode load resistor (90)	A20	Adjust for maximum output
"	"	"	"	"	VTVM connected to pin #5 of 6S8 and chassis.	A21	Adjust for zero output. Swing signal generator 75KC above and 75KC below IF frequency and record both readings. If not equal in magnitude, repeat last two steps and check again. It may be necessary to adjust A20 slightly to get these readings equal. Recheck A21 for zero output. This adjustment is very critical as misadjustment will cause distortion.
300Ω See pre-alignment instructions.	FM dipole terminals.	99.9MC (Mod. off)	FM	260	VTVM connected across 1st limiter grid filter (81).	A22, A23,A24	Adjust for maximum output in order given.

SPARTON
MODEL 10BW76PA

SPARTON
MODEL 10BW76PA

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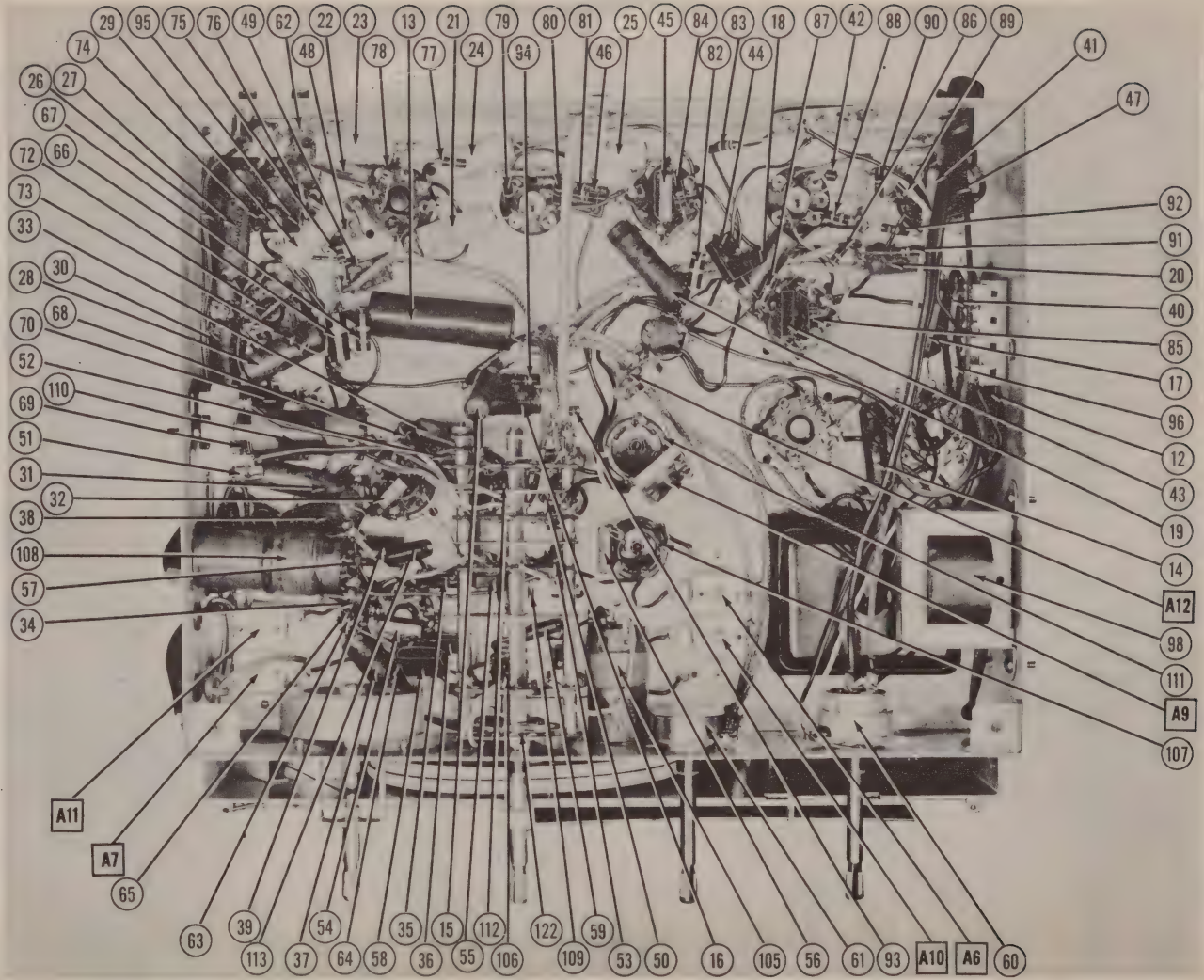
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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6S97	6S97	6BK	
2	Converter	7Q7	7Q7	8AL	
3	1st IF Amp.(FM-AM)	6SK7GT	6SK7GT	8N	
4	2nd IF Amp.(FM)	6SK7GT	6SK7GT	8N	
5	Tuning Eye	6E5	6E5	6R	
6	1st Limiter (FM)	6SJ7GT	6SJ7GT	8N	
7	2nd Limiter (FM)	6SJ7GT	6SJ7GT	8N	
8	Det.-AVC-AF (AM-FM)	6S8GT	6S8GT	9CB	
9	Power Output	6V6GT/G	6V6GT/G	7AC	
10	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11A	15	450	PA4300-1	EL-344	AF222J	UP6CJ47	FP390	DY-3x15-450	■ Filter
B	15	450							▲ " "
C	10	450							
12	20	25	PA4303-2	TA-25	PRS25-20	BR202A	TC26	M-20-25	Output Cath. Bypass
13	8	400	PA4303-4	UT-8	PRS450-8	BR845	TC71	M-8-450	Conv. Screen Bypass
14	.002	600	PC40GM-202	TC-22	684-002	DT6D2	TP409	S-6-002	Output Plate Bypass
15	.01	400	PC40FL-103	TC-11	484-01	DT4S1	TP421	S-4-01	Audio Coupling
16	.01	400	PC40FL-103	TC-11	484-01	DT4S1	TP421	S-4-01	" "
17	.006	600	PC40GM-602	TC-26	684-006	DT6D6	TP409	S-6-006	Tone Compensation
18	.02	400	PC40GL-203	TC-12	484-02	DT4S2	TP423	S-4-02	2nd Lim. Plate Decoup.
19	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	RF Bypass Pwr. Supp.
20	.001	200	PC40GK-102	TC-21	484-001	DT6D1	TP404	S-6-001	De-emphasis
21	.02	400	PC40GL-203	TC-12	484-02	DT4S2	TP423	S-4-02	2nd IF Plate Decoup.
22	.005	200	PC40FK-502	TC-25	484-005	DT6D5	TP408	S-6-005	2nd IF Cath. Bypass
23	.005	400	PC40FL-502	TC-25	484-005	DT6D5	TP408	S-6-005	2nd IF Screen Bypass
24	.01	200	PC40FK-103	TC-11	484-01	DT4S1	TP421	S-4-01	2nd IF Fil. Bypass
25	.005	200	PC40FK-502	TC-25	484-005	DT6D5	TP408	S-6-005	AVC Filter
26	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	1st IF Plate Decoup.
27	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	1st IF Screen Bypass
28	.02	400	PC40GL-203	TC-12	484-02	DT4S2	TP423	S-4-02	1st IF Cath. Bypass
29	.01	200	PC40FK-103	TC-11	484-01	DT4S1	TP421	S-4-01	1st IF Fil. Bypass
30	.05	200	PC40FK-503	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
31	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	Conv. Plate Decoup.
32	.01	200	PA4325-1	TC-11	484-01	DT4S1	TP421	S-4-01	Conv. Fil. Bypass
33	.01	400	MC61GL-103	TC-11	484-01	DT4S1	TP421	S-4-01	Conv. Screen Bypass
34	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	RF Screen Bypass
35	.01	200	PA4325-1	TC-11	484-01	DT4S1	TP421	S-4-01	RF Fil. Bypass
36	.01	200	PA4325-1	TC-11	484-01	DT4S1	TP421	S-4-01	RF Cath. Bypass
37	.05	200	PC40GK-503	TC-15	484-05	DT4S5	TP426	S-4-05	" " " "
38	.05	400	PC40GL-503	TC-15	484-05	DT4S5	TP426	S-4-05	RF Bypass Pwr. Supp.
39	.05	200	PC40GK-503	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
40	.006	600	PC40GM-602	TC-26	684-006	DT6D6	TP409	S-6-006	Tone Compensation
41	100	500	MC60F-101	1FM-31	1468-0001	5W5T1	MC235	M0.5-31	" "
42	2.2		PA4328-1						Balancing Cap. Cer.
43	150	500	MC60F-151	1FM-315	1468-00015	5W5T15	MC236	M0.5-315	2nd Lim. Screen Bypass
44	24	500	MC60F-240	MS-425	1468-000025	5W5Q25	MC220	M0.5-425	Limiter Coupling
45	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	1st Lim. Screen Bypass
46	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	AVC Filter
47	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	RF Filter
48	150	500	MC60F-151	1FM-315	1468-00015	5W5T15	MC236	M0.5-315	Diode Filter
49	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	" "
50	80		PA4328-3						Fixed Padder Cer.
51	100	500	MC60F-101	1FM-31	1468-0001	5W5T15	MC235	M0.5-31	" "
52	51	500	MC62F-510	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	Osc. Grid Capacitor
53	46	500	PA4328-2						Fixed Padder
54	1000	500	MC60G-102	1FM-21	1468-001	1W5D1	MC455	MW.5-21	RF Screen Bypass
55	10	500	MC60F-100	MS-41	1468-00001	5W5Q1	MC215	M0.5-41	RF Coupling
56	100	500	MC60F-101	1FM-31	1468-0001	5W5T1	MC235	M0.5-31	Fixed Trimmer
57	4.7		PA4326-2						RF Coupling Cer.
58	51	500	MC60G-510	1FM-45	1468-00005	5W5Q1	MC225	M0.5-45	" "
59	46		PA4328-2						Fixed Padder Cer.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT	REPLACEMENT DATA: SPARTON PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
98	.122A	130Ω	5 Henries @ 1000Ω	AB47000-1		T20C54	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	INSTALLATION NOTES
99	117V AC @ .9A	740V CT @ .122A	5.2V AC @ 1.8A	6.4V AC @ 3.3A	AB44006-1	P-6013†	T22R06†	†Drill new mounting holes.

TRANSFORMER (OUTPUT)

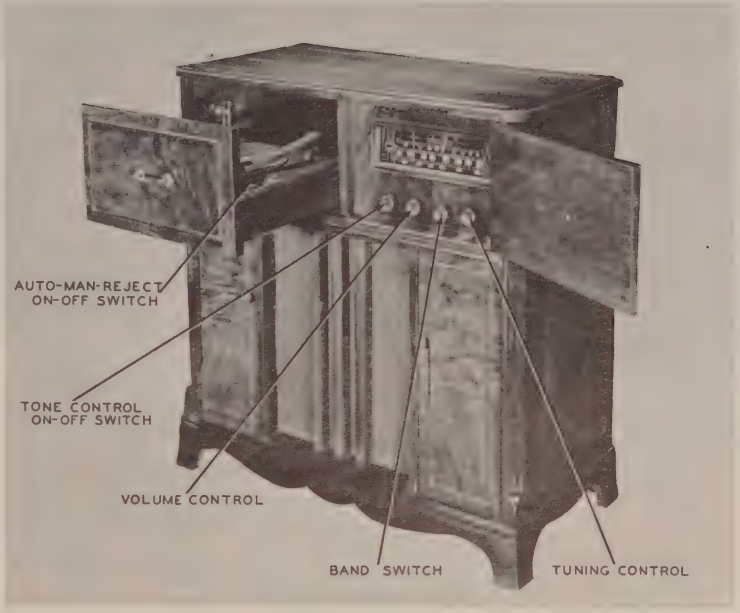
ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
100	48000Ω	7Ω	270Ω	1.2Ω	Part of PC36000-11	A-2203	T22S58		

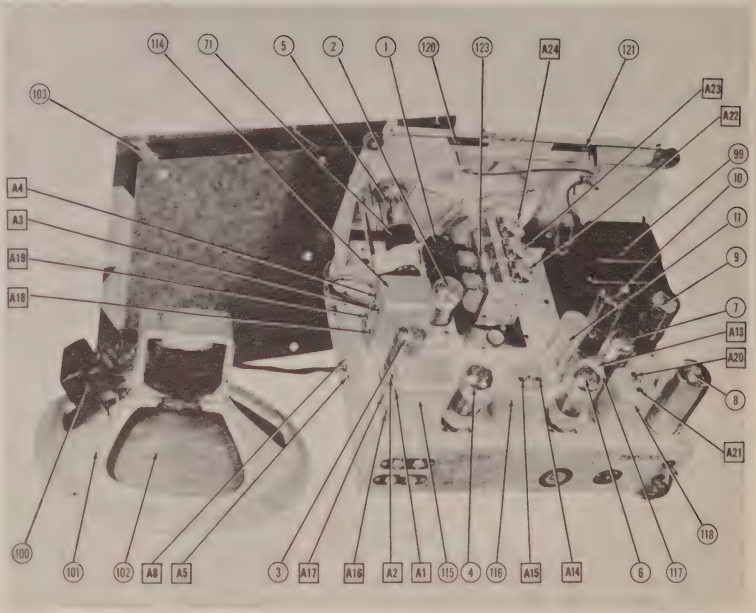
SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
	FIELD RES. / VC IMP.				
101	700Ω / 7Ω	PC63000-11			
	CONE DIA. / VC DIA.				
102	9-3/8" / 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: MEISSNER PART No.	
103A	Loop Ant.	.2Ω	1.2Ω	AB43011-3		103B, 105B, 107B, 108B, 110B, 111B and 119 used in receivers with prefix "A" before the serial number.
B	" "			AB43011-6		
				AB43011-7		
104	FM Dipole					
105A	SW Ant.Coil	.7Ω	0Ω	AA6758-5	14-1044	
B	SW Ant.Coil			AA6758-6		
106A	FM " "					
	Sec.		0Ω	AA6767-3		
B	FM Ant.Coil Pri.		0Ω	AA6786-1		
107A	BC RF Coil	6Ω	7Ω	AA6756-2	14-1027	
B	" " "			AA6756-3		
108A	SW " "	7Ω	0Ω	AA6760-4	14-1045	
B	" " "			AA6760-5		
109	FM " "		0Ω	AA6767-2		
110A	BC Osc.Coil		6.5Ω	AA6752-2		
B	BC " "			AA6752-5		
111A	SW " "	.4Ω	0Ω	AA6770-1	14-1046	
B	SW " "			AA6770-2		
112	FM Osc.Coil		0Ω	AA6767-1		
113	HF Choke "		2Ω	AA6769-1		
114	Input IF	.3Ω-1Ω	15Ω*	AA6803-1		*Includes both secondaries.
115	Inter. IF	15.5Ω‡	15Ω-3Ω	AA6803-1		‡Includes both primaries.
116	Output IF	.3Ω	.3Ω	AA6804-1		
117	Limiter Plate Reactor Coil		1Ω	AA6785-1		
118	Disc. Coil	1Ω	.7Ω-.7Ω	AA6805-1		
119	Ant. Loading Coil			AA6780-1		


AUTO-MAN-REJECT
ON-OFF SWITCH
TONE CONTROL
ON-OFF SWITCH
VOLUME CONTROL
BAND SWITCH
TUNING CONTROL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PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SPARTON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
60A	500KΩ	1	PA4400-6	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 60A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
61A	2 Meg.	1	PA4401-2	MK403	D13-139	AM-66-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 61A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	
62	150KΩ	½	BR12S-154	BTS-150K	Br.-Grn.-Yl. FM Antenna Loading
63	220KΩ	½	BR12G-224	BTS-220K	Red-Red-Yl. RF Grid
64	220Ω	½	BR12G-201	BW-½-220	Red-Blk.-Br. RF Cathode
65	33KΩ	½	BR12S-333	BTS-33K	Or.-Or.-Or. RF Screen Dropping
66	10KΩ	2	DR12S-103	BT-2-10K	Br.-Blk.-Or. Converter Screen Dropping
67	18KΩ	1	CR12S-183	BTA-18K	Br.-Gray-Or. Converter Screen Bleeder
68	20KΩ	½	BR12G-203	BTS-22K	Red-Blk.-Or. Oscillator Grid
69	1000Ω	½	BR12S-102	BTS-1000	Br.-Blk.-Red Converter Plate Decoupling
70	220KΩ	½	BR12G-224	BTS-220K	Red-Red-Yl. AVC Network
71	1 Meg.	½	BR12S-105	BTS-1 Meg.	Br.-Blk.-Grn. Tuning Eye Plate Load
72	330Ω	½	BR12G-331	BW-½-330	Or.-Or.-Br. 1st IF Cathode
73	82KΩ	½	BR12S-823	BTS-82K	Gray-Red-Br. 1st IF Screen Dropping
74	1000Ω	½	BR12S-102	BTS-1000	Br.-Blk.-Red 1st IF Plate Decoupling
75	47KΩ	½	BR12S-473	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
76	56KΩ	½	BR12S-563	BTS-56K	Grn.-Blue-Or. AVC Network
77	82KΩ	½	BR12S-823	BTS-82K	Gray-Red-Or. 2nd IF Screen Dropping
78	330Ω	½	BR12G-331	BW-½-330	Or.-Or.-Br. 2nd IF Cathode
79	1000Ω	½	BR12S-102	BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling
80	1 Meg.	½	BR12S-105	BTS-1 Meg.	Br.-Blk.-Grn. 1st Limiter Grid
81	100KΩ	½	BR12S-104	BTS-100K	Br.-Blk.-Yl. 1st Limiter Grid
82	4700Ω	1		BTA-4700	Yl.-Vi.-Red 1st Limiter Plate Load
83	68KΩ	½	BR12S-683	BTS-68K	Blue-Gray-Or. 1st Limiter Screen Dropping
84	15KΩ	½	BR12S-153	BTS-15K	Br.-Grn.-Or. 1st Limiter Screen Bleeder
85	15KΩ	½	BR12S-153	BTS-15K	Br.-Grn.-Or. 2nd Limiter Screen Bleeder
86	68KΩ	½	BR12S-683	BTS-68K	Blue-Gray-Or. 2nd Limiter Screen Dropping
87	220KΩ	½	BR12G-224	BTS-220K	Red-Red-Yl. 2nd Limiter Grid
88	27KΩ	½	BR12S-273	BTS-27K	Red-Vi.-Or. 2nd Limiter Plate Decoupling
89	100KΩ	½	BR12S-104	BTS-100K	Br.-Blk.-Yl. Discriminator Load
90	100KΩ	½	BR12S-104	BTS-100K	Br.-Blk.-Yl. Discriminator Load
91	100KΩ	½	BR12S-104	BTS-100K	Br.-Blk.-Yl. Deemphasis Network
92	270KΩ	½	BR12S-274	BTS-270K	Red-Vi.-Yl. AF Plate Load
93	47KΩ	½	BR12S-473	BTS-47K	Yl.-Vi.-Or. AF Grid
94	10 Meg.	½	BR12S-106	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
95	270KΩ	½	BR12S-274	BTS-270K	Red-Vi.-Yl. Diode Load
96	240Ω	2	DR12G-241	BW-2-220	Red-Yl.-Br. Output Cathode
97	2200Ω	½	BR12S-222	BTS-2200	Red-Red-Red Loop Antenna Loading-See Note 1

Note 1 - Used only on models having prefix "A" before serial numbers.

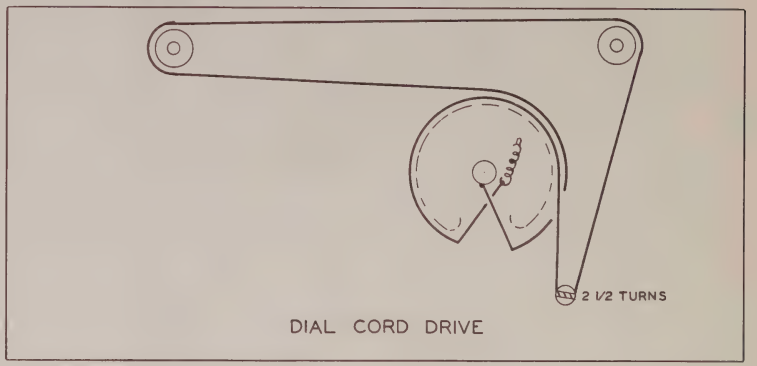
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

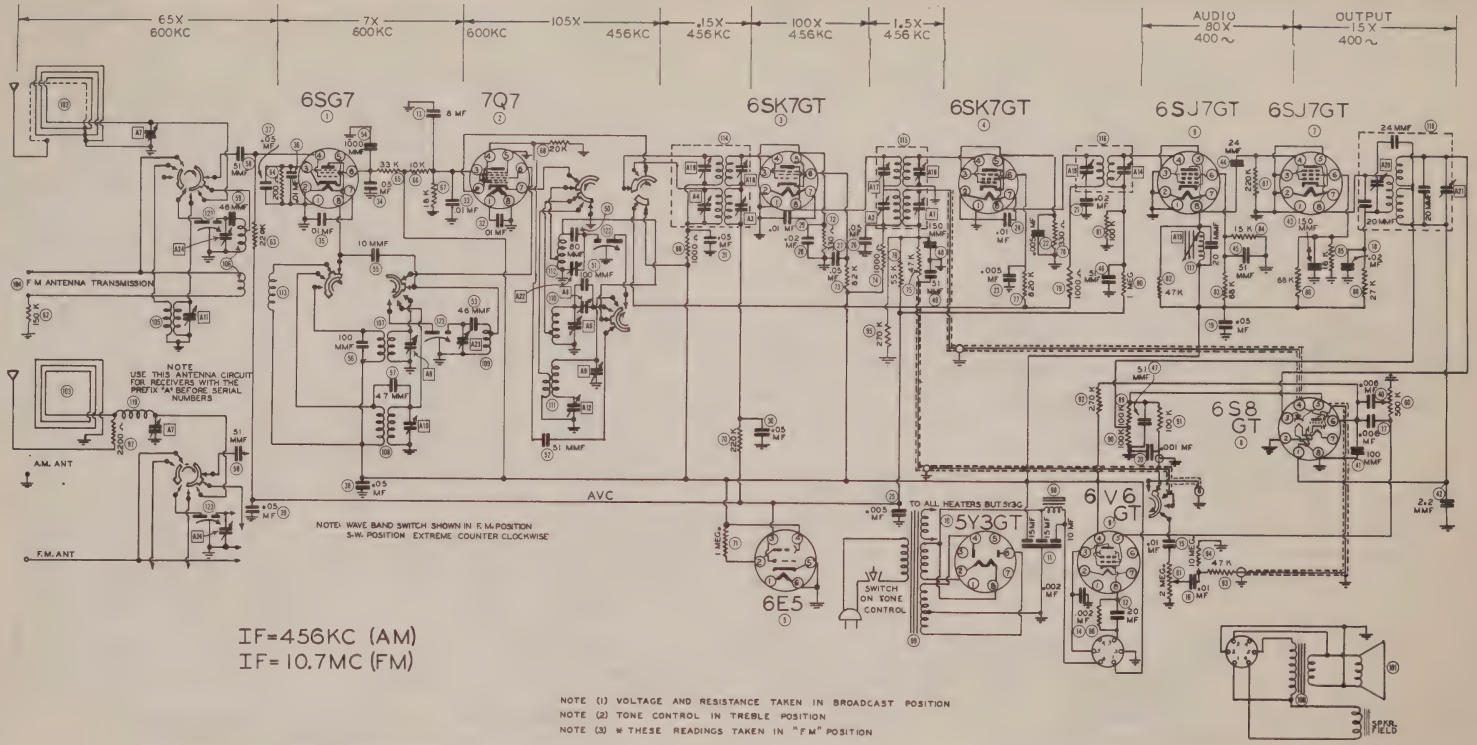
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SPARTON PART No.		
120	Bayonet	6-8	0.25	Blue	PA4100-3		Type 44
121	"	6-8	0.25	"	PA4100-3		" "

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
122	Switch	PB42003	Band-Phono
123	Tuning Cap.	PB40405	26-474MMF (each Section AM) 20-56MMF (each Section FM)
A7 A10	Trimmer Strip	PA4377-1	BC Ant. Trimmer SW RF Trimmer
A11 A6	Trimmer Strip	PA4357-2	SW Ant. Trimmer BC RF Trimmer
A24	Trimmer	PA4352-1	FM Ant. Trimmer
A23	"	PA4352-1	FM RF Trimmer
A22	"	PA4352-1	FM Osc. Trimmer
A8 A5	Trimmer Strip	AB43500-36	BC Osc. Padder BC Osc. Trimmer
A9	Trimmer	PA4352-3	SW Osc. Trimmer



DIAL CORD DRIVE



IF=456KC (AM)
IF=10.7MC (FM)

NOTE (1) VOLTAGE AND RESISTANCE TAKEN IN BROADCAST POSITION
NOTE (2) TONE CONTROL IN TREBLE POSITION
NOTE (3) # THESE READINGS TAKEN IN "F.M." POSITION

VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	CAP
1	6SG7	0V.	0V.	3.2V.DC	-.2V.DC	———	170V.DC	6.3V.AC	295 V.DC	
2	7Q7	6.3V.AC	295 V.DC	120 V.DC	-6.5V.DC	0V.	0V.	0V.	0V.	
3	6SK7GT	0V.	0V.	3.9V.DC	-.2V. DC	3.9V. DC	120 V.DC	6.3V.AC	295 V.DC	
4	6SK7GT	0V.	0V.	#3.9V.DC	0V.	#3.9V.DC	#100 V.DC	6.3V.AC	# 280 V.DC	
5	6SJ7GT	0V.	0V.	0V.	#-1V.DC	0V.	#44 V.DC	6.3V.AC	# 280 V.DC	
7	6SJ7GT	0V.	0V.	0V.	#-1V.DC	0V.	#46 V.DC	6.3V.AC	# 240 V.DC	
8	6S8GT	-1V.DC	0V.	-1V.DC	-1V.DC	.6 V.DC	115 V.DC	6.3V.AC	0V.	-1V.DC
9	6V6GT	0V.	0V.	280 V.DC	295 V.DC	0V.	0V.	6.3V.AC	18V.DC	
10	5Y3GT	0V.	400 V.DC	0V.	370 V.AC	0V.	370 V.AC	390 V.DC	400 V.DC	

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	CAP
1	6SG7	0Ω	0Ω	180Ω	410 KΩ	———	46 KΩ	.1Ω	17 KΩ	
2	7Q7	.1Ω	18 KΩ	13 KΩ	18.5 KΩ	0Ω	8 Ω	.5Ω	0 Ω	
3	6SK7GT	0Ω	0Ω	300Ω	410 KΩ	300Ω	100 KΩ	.1Ω	75 KΩ	
4	6SK7GT	0Ω	0Ω	300Ω	.1Ω	300Ω	#100 KΩ	.1Ω	# 18 KΩ	
5	6SJ7GT	0Ω	0Ω	0Ω	88 KΩ	0Ω	# 12 KΩ	.1Ω	# 17 KΩ	
7	6SJ7GT	0Ω	0Ω	0Ω	210 KΩ	0Ω	# 12 KΩ	.1Ω	# 44 KΩ	
8	6S8GT	80 KΩ	0Ω	80 KΩ	210 KΩ	100 KΩ	285 KΩ	.1Ω	0Ω	6 MEG.
9	6V6GT	INF.	0Ω	17 KΩ	17 KΩ	300 KΩ	300 KΩ	.1Ω	220Ω	
10	5Y3GT	INF.	17 KΩ	INF.	44Ω	INF.	50Ω	17 KΩ	17 KΩ	

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-34

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

STEWART-WARNER MODELS
51T126 (CODE 9018-C), 51T136 (9018-F),
51T146 (9018-H), 51T176 (9018B)

STEWART-WARNER MODEL 51T136 (Code 9018-F)

TRADE NAME	Stewart-Warner, Model 51T126.(Code 9018-C), 51T136 (Code 9018-F), 51T146 (Code 9018-H), 51T176 (9018-B).
MANUFACTURER	Stewart-Warner Corp., 1826 Diversey Pkway, Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver-Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 1st Det.-Osc., 12BA6 IF Amp., 12AT6 2nd Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1750KC RATING .235 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer to 1st reference mark at left end of dial back plate. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum. Output of signal generator should be no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
200MMFD.	High side to rear stator of tuning capacitor. Low side to B-.	455KC	Tuning capacitor fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200MMFD.	High side to ext. ant. lead. Low side to chassis.	1500KC	2nd ref. mark from right end of dial back plate.	"	A5	" " " "
200MMFD.	"	"	Tune for maximum output.	"	A6	" " " "

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

STEWART-WARNER MODELS
51T126, 51T136, 51T146, 51T176

TUBES

ITEM No.	USE	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7CC	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEWART-WARNER PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	500256	EL-24	AF84D4A†	UP4215	FP306†	DY-4020-150	■ Filter
B	20	150							▲ "
7	.05	400	502157	TC-15	484-05	DT4S5	TP426	S-4-05	Rect. Bypass
8	.02	400	502152	TC-12	484-02	DT4S2	TP423	S-4-02	Output Plate Bypass
9	.004	400	502158	TC-24	484-004	DT6D4	TP407	S-6-004	Audio Coupling
10	.0008	400	502470	MS-38	1479-0008	1W5T8	MC251	M0.3-38	Audio Plate Bypass
11	.004	400	502156	TC-24	484-004	DT6D4	TP407	S-6-004	Audio Coupling
12	.05	200	502153	TC-15	484-05	DT4S5	TP426	S-4-05	AVC Filter
13	.2	400	502138	TC-2	484-.2	DT4P2	TP429	S-4-2	Line Isolation
14	.01	400	502151	TC-11	484-01	DT4S1	TP421	S-4-01	Ant. Isolation
15	220	500	502882	1FM-32	1468-0002	5W5T2	MC237	M0.5-32	IF Bypass Vol. Cont.
16	47	500	502929	1FM-45	1468-00005	5W5Q5	MC225	M0.5-45	Osc. Grid Capacitor

†Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEWART-WARNER PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17	1 Meg.	1	502928				Volume Control & Switch

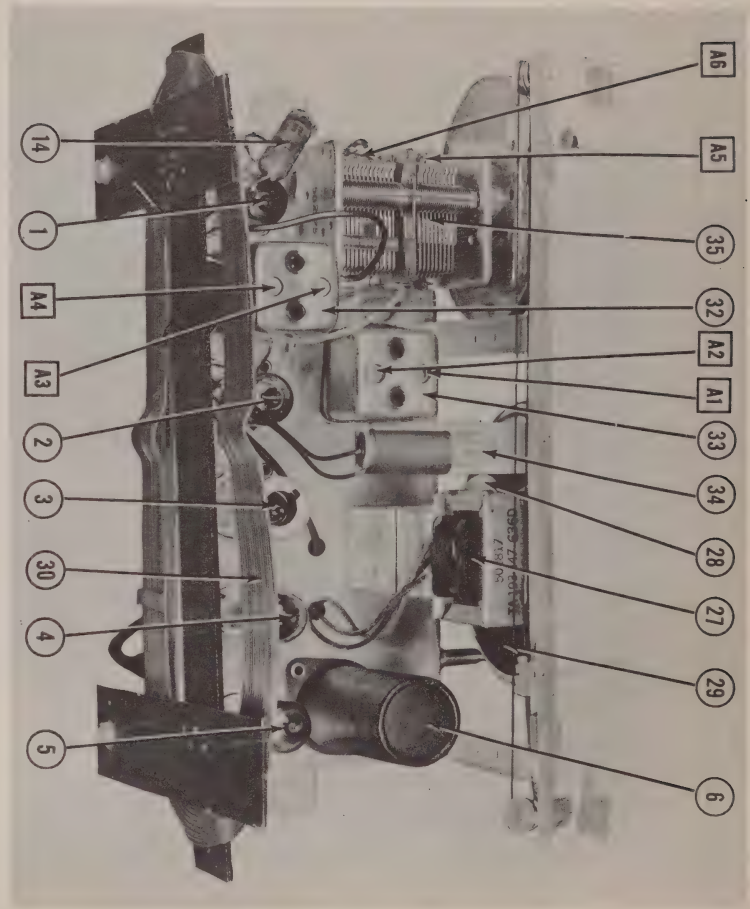
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEWART-WARNER PART No.	IRC PART No.	IDENTIFICATION CODES
18	22KΩ	½	502130	BTS-22KΩ	Red-Red-Or. Oscillator Grid
19	220Ω	½	502456	BW-½-220	Red-Red-Br. IF Cathode
20	2.2 Meg.	½	502135	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
21	10 Meg.	½	502136	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
22	470KΩ	½	502134	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
23	470KΩ	½	502134	BTS-470K	Yl.-Vi.-Yl. Output Grid
24	150Ω	1	502932	BW-1-150	Br.-Grn.-Br. Output Cathode
25	1500Ω	1	502933	BTA-1500	Br.-Grn.-Red Filter
26	33Ω	½	502574	BW-½-33	Or.-Or.-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: STEWART-WARNER PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
27A	2200Ω	2.3Ω	170Ω tapped @ 92	.6Ω	502187	A-3876*			*Bend mounting tabs down, file out slots and mount on original bracket. Add extra filter to reduce hum level.
B					504583				Alternate transformer.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.				
28A	PM	2.8Ω	W-502816	ST-113† Mod. P4-X		†Fabricate new mounting bracket.
B			C-502816			Alternate Speaker.
	CONE DIA.	VC DIA.				
29A	4"	1/2"	504584			
B			502518			Cone for alternate speaker.

R F COILS

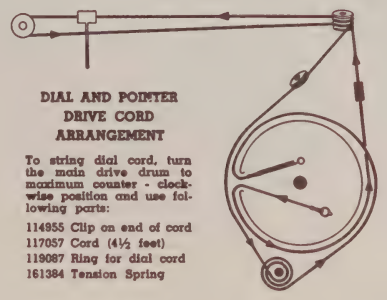
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: MEISSNER PART No.
30	Loop Ant.	.2Ω	1.5Ω	502937	
31	Osc. Coil	1.2Ω	7.5Ω	502934	14-1040
32	Input IF	23Ω	23.5Ω	502926	16-6666
33	Output IF	26Ω	26Ω	502927	16-6667

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: STEWART-WARNER PART No.		INSTALLATION NOTES
34	Bayonet	6-8	0.15	Brown	116921		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	STEWART-WARNER PART No.	NOTES
35	2 Gang Var. Cap	502925	(25-468 MMF, 35-198 MMF)
	Dial Glass	504774	51T126, 51T136, 51T146
	Dial Glass	504812	51T176
	Dial Pointer	502367	

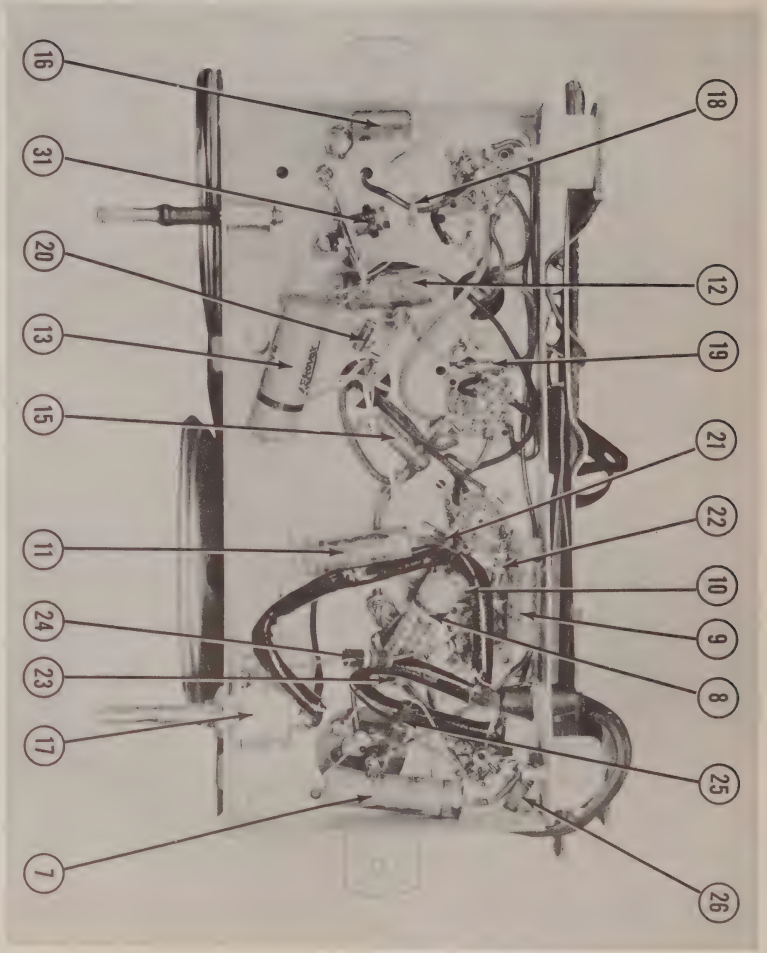


DIAL AND POINTER DRIVE CORD ARRANGEMENT

To string dial cord, turn the main drive drum to maximum counter - clockwise position and use following parts:

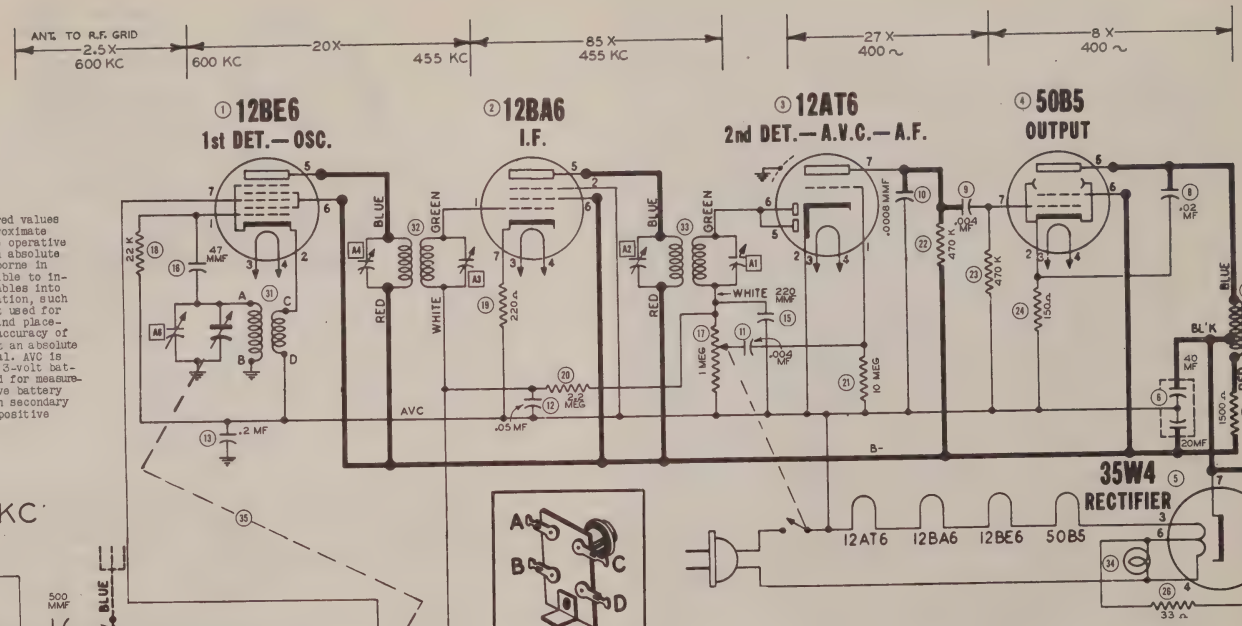
114955 Clip on end of cord
117057 Cord (4½ feet)
119087 Ring for dial cord
161384 Tension Spring

CHASSIS—BOTTOM VIEW



STEWART-WARNER MODELS 51T126, 51T136, 51T146, 51T176

STEWART-WARNER MODELS 51T126, 51T136, 51T146, 51T176



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement. Connect negative battery lead to white lead on secondary of loop antenna and positive battery lead to B-.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	~5V. DC	0V.	36 V.AC	24V.AC	94V. DC	94V.DC	0V.
2	12BA6	0V.	0 V.	24V.AC	13V.AC	94V.DC	94V.DC	1.6V.DC
3	12AT6	.55V.DC	0 V.	0V.	13V.AC	~45V.DC	~45V.DC	37V.DC
4	50B5	0V.	5.8V.DC	36V.AC	87V.AC	118V.DC	94V.DC	0V.
5	35W4	123V.DC	0V.	87V.AC	117V.AC	111V.AC	113V.AC	123V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

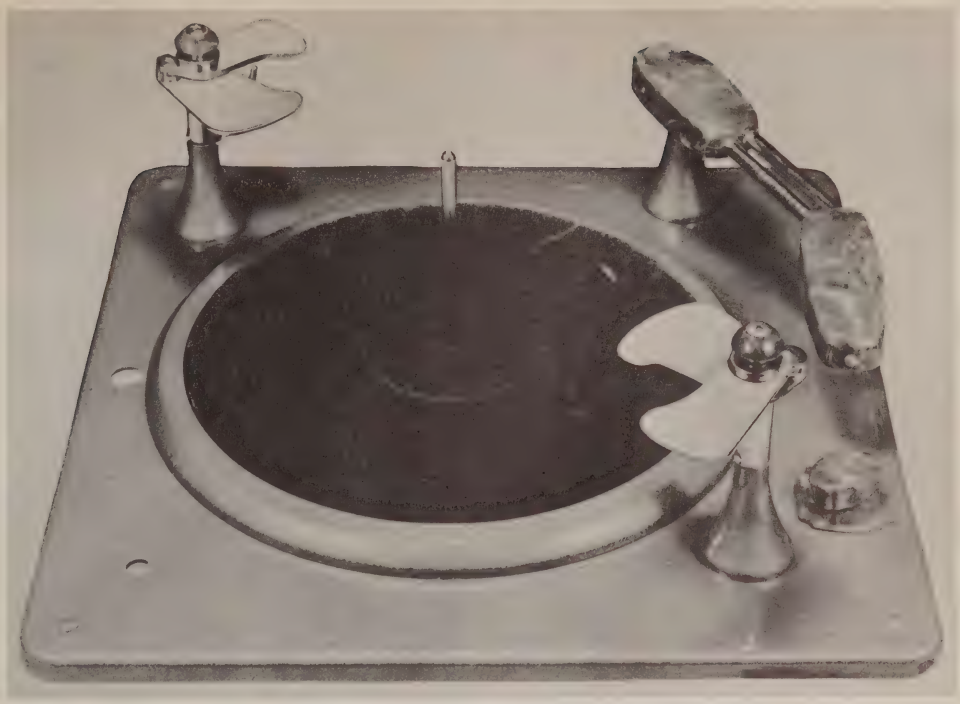
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	210K Ω	1Ω	32Ω	22Ω	85KΩ	85KΩ	3MEG
2	12BA6	3MEG	0Ω	22Ω	12Ω	85KΩ	85KΩ	180Ω
3	12AT6	10MEG	0Ω	0Ω	12Ω	875KΩ	875KΩ	555KΩ
4	50B5	430KΩ	135Ω	32Ω	77Ω	85KΩ	85KΩ	430KΩ
5	35W4	85KΩ	INF.	77Ω	102Ω	135Ω	100Ω	85KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

475-35

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



TOP VIEW

GENERAL INFORMATION

The V-M Model 200-B is a two-post changer designed to play twelve 10-inch or ten 12-inch records at a single loading. No adjustment is necessary when changing record sizes, but records should not be intermixed. The mechanism is designed to prevent damage due to jamming or moving the tone arm during cycle. The last record will be repeated until the changer is turned off.

THIS CHANGER HAS BEEN USED IN POSTWAR PRODUCTION BY THE FOLLOWING MANUFACTURERS:

Name	*Address*
John Meck Industries, Inc.	Pennsylvania & Liberty, Plymouth, Indiana
Midland Mfg. Co.	Decorah, Iowa
Minerva Corp. of America	238 William Street, New York, New York
Motor Parts Corporation	1229 N. Broad Street, Philadelphia, Pennsylvania
Northeastern Eng. Co.	Manchester, New Hampshire
Ohio Electronics, Inc.	1156 Dorr Street, Toledo, Ohio
Pacific Electronics	Sprague & Jefferson, Spokane, Washington
Philmore Mfg. Co.	113 University Place, New York, New York
Radio Corp. of America	Camden, New Jersey
Mark Simpson Mfg. Co.	188 W. 4th Street, New York, New York
Telequip Radio Co.	1901-07 South Washtenaw Avenue, Chicago, Illinois
Telicon Corp.	305 E. 63rd Street, New York, New York
Templetone Radio Corp.	New London, Connecticut
American Electronics	37 E. 18th Street, New York, New York
Bedford Radio Mfg. Co.	1619 Bedford Avenue, Brooklyn, New York
Coronet Radio & Tel. Corp.	111 Front Street, Hempstead, L. I., New York
Duosonic Radio	700 Elton Avenue, Bronx, New York

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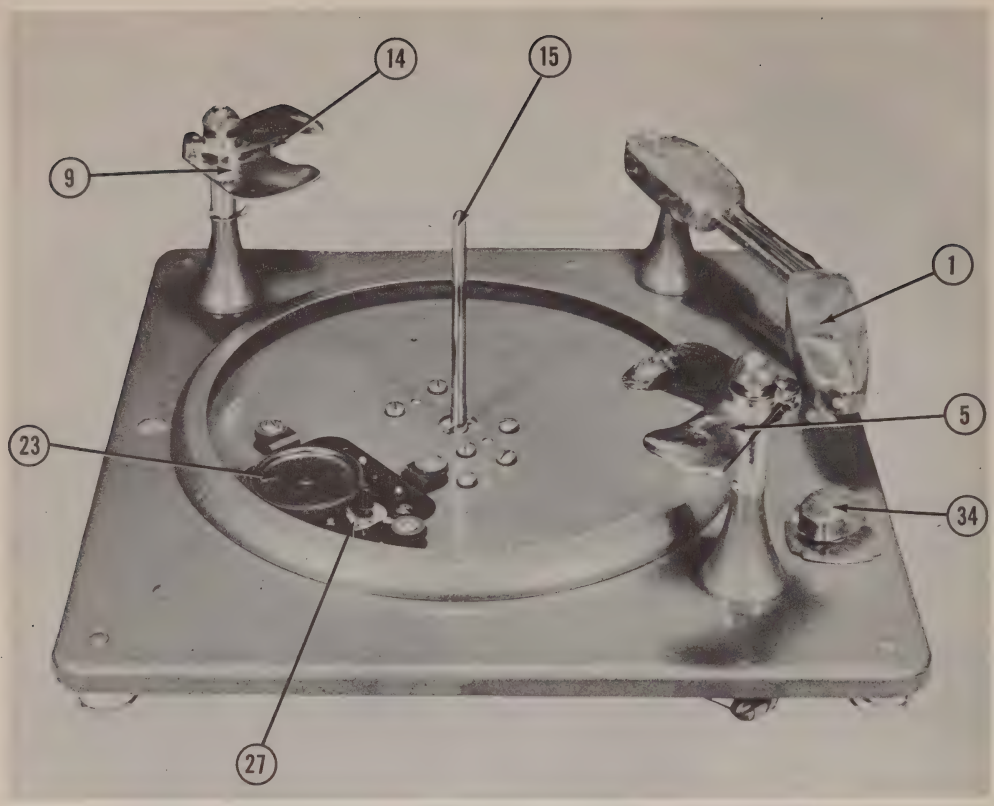
V-M MODEL
200-B

V-M MODEL
200-B



TOP VIEW LESS TURNTABLE

THE CHANGE CYCLE

The worm follower (87), which transmits power for the change cycle, is normally held away from the worm by the trip rod (88). This trip rod may be moved by any of three actions:

1. Pushing the control knob (34) moves the reject rod (52), which, in turn, moves the ratchet arm (62) and thus the trip rod.

2. At the end of a record the needle will move into the leadout groove. If the needle moves to within 1 7/8″ of the spindle center, the positive trip screw (58) will move the ratchet arm assembly.

3. Any movement away from the spindle, as with an eccentric groove, will pivot the pawl (59) on the tone arm crank (55), thus pushing against the ratchet arm.

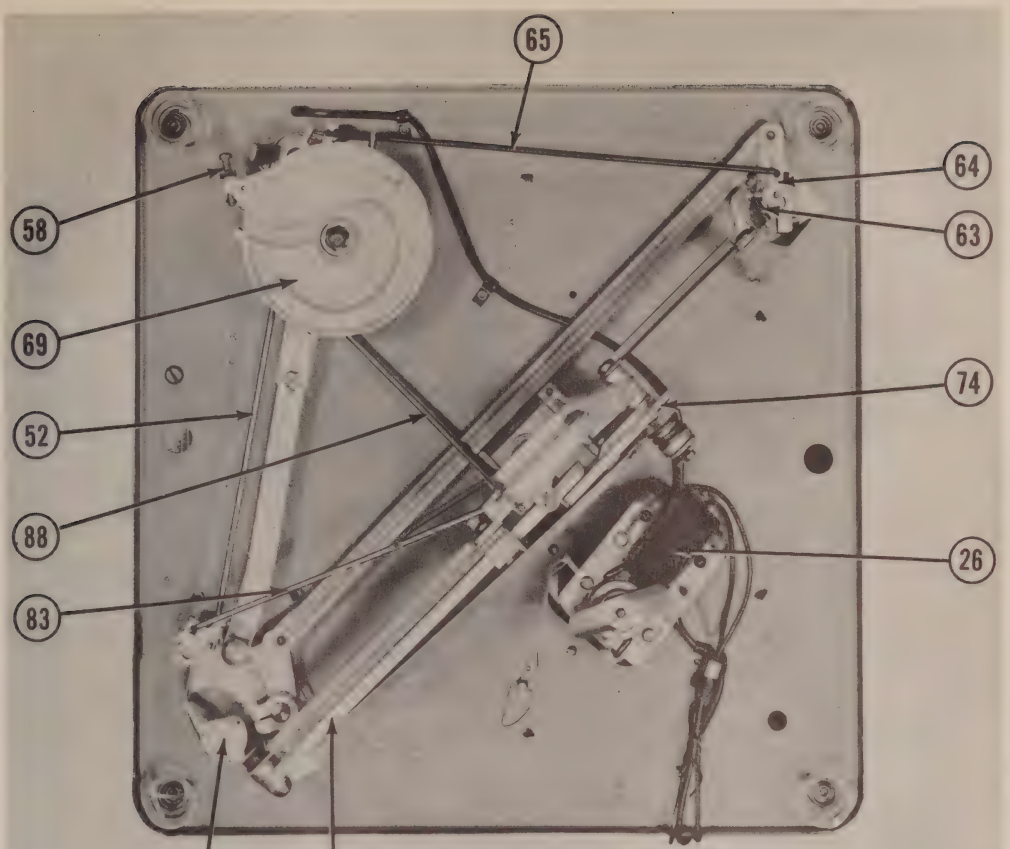
When the trip rod is moved out of the way, the worm follower is free to tilt. Since one side is weighted, it will fall and cause the other side to enter the worm.

As the worm follower moves up the worm the clutch assembly (74) is turned, thereby moving the bell crank assembly (66). This bell crank assembly turns the record shelves to release a record and at the same time, acting through the cam rack (67), turns the cam (69).

As the pickup lift pin rides up the inclined portion of the outer edge of the cam, the pickup arm is forced up clear of the record. The cam follower pin in the tone arm crank enters one of the grooves in the top of the cam. As the cam continues to turn, the cam follower moves to the outer groove, moving the tone arm out clear of the record stack.

When the cam follower reaches the cut out portion between the two grooves (approximately 180° from the starting position) its action will be determined by the size records being used. If 10-inch records are on the stack, the selector rod (65) will press against the tone arm crank and cause the cam follower to cross to the inner groove. If 12-inch records are on the stack, the selector (14) will be held back so the selector rod will not exert pressure on the tone arm crank and the cam follower will stay in outer groove.

As the worm follower starts back down the worm, the cam will move back toward its original position. The cam follower will follow the inner groove for 10-inch records. For 12-inch records the outer groove will be followed to the point where it splits, then the center groove will determine the 12-inch set-down point.



BOTTOM VIEW

ADJUSTMENTS

SET-DOWN POINT

To adjust the set-down point, cycle the changer and stop the turntable just before the needle comes down on the record. Lift the tone arm and remove the lift pin (10) by pulling straight up. Loosen the set screw in the tone arm crank (55), and with the needle resting on the record hold the tone arm crank with one hand and move the tone arm until the needle is 1/8" from the edge of the record.

After tightening the set screw, check with several records of both sizes to be sure the adjustment is correct.

POSITIVE TRIP

The positive trip screw (58) should be adjusted to trip the changer when the needle reaches a point 1 7/8" from the center of the record. After adjusting the screw, tighten the lock nut to maintain the adjustment.

TONE ARM HEIGHT

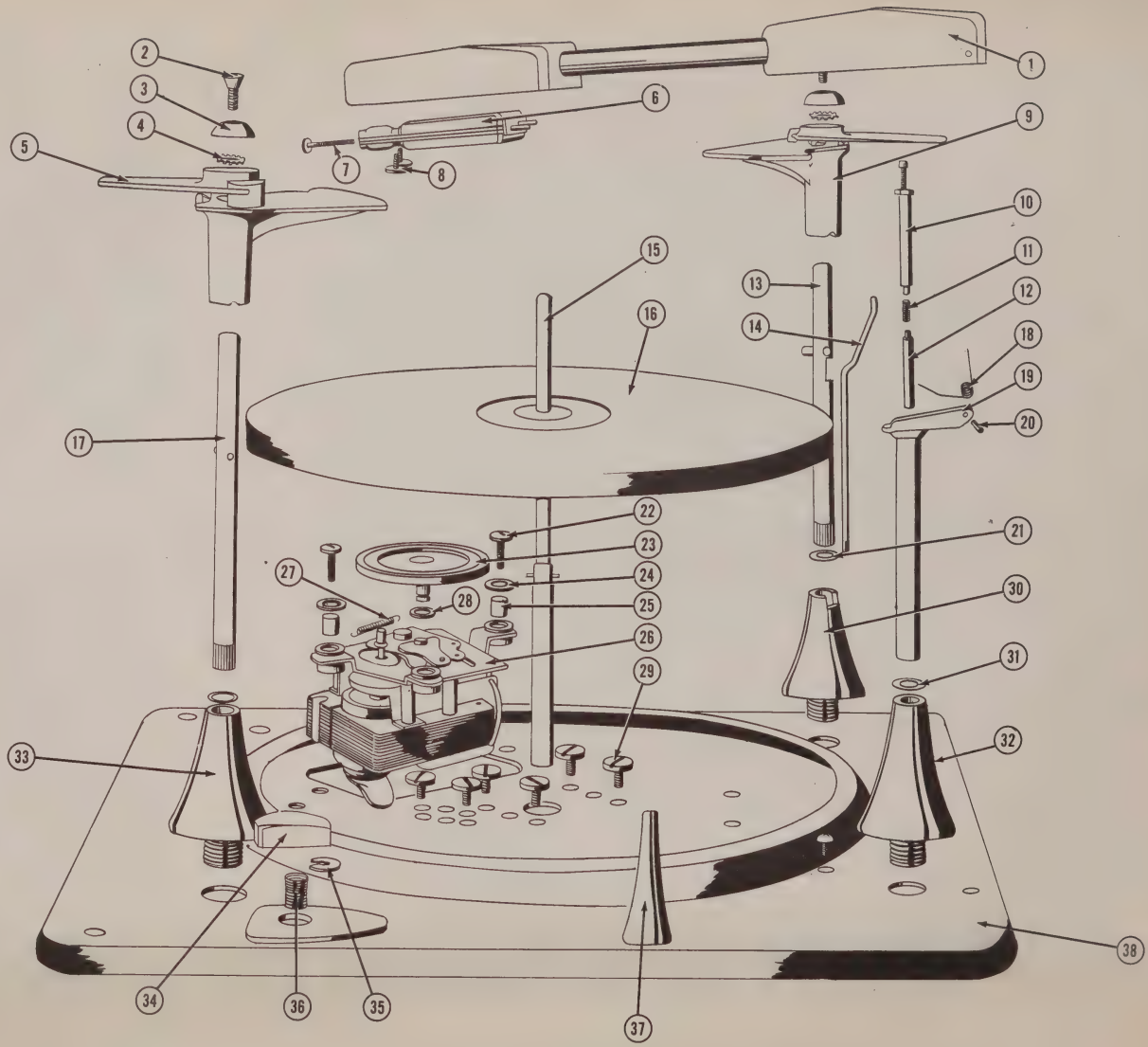
The tone arm should clear the bottom record on the support shelves by 1/8" at the highest part of the cycle. This height is adjusted by turning the screw in the lift pin assembly (10).

NEEDLE PRESSURE

The needle pressure should be between 1 1/2 and 1 3/4 ounces. If adjustment is necessary, bend the long leg of the hinge spring (18) slightly.

BLADE SYNCHRONIZATION

At the end of a cycle, with the changer in playing position, the upper blades should set within 1/8" of a 12-inch record. During cycle, the record should drop simultaneously from both blades. If adjustment is necessary, it may be made by loosening the set screws in the blade crank (54) and the bell crank (66). After adjustment is completed, be sure to tighten the set screws securely.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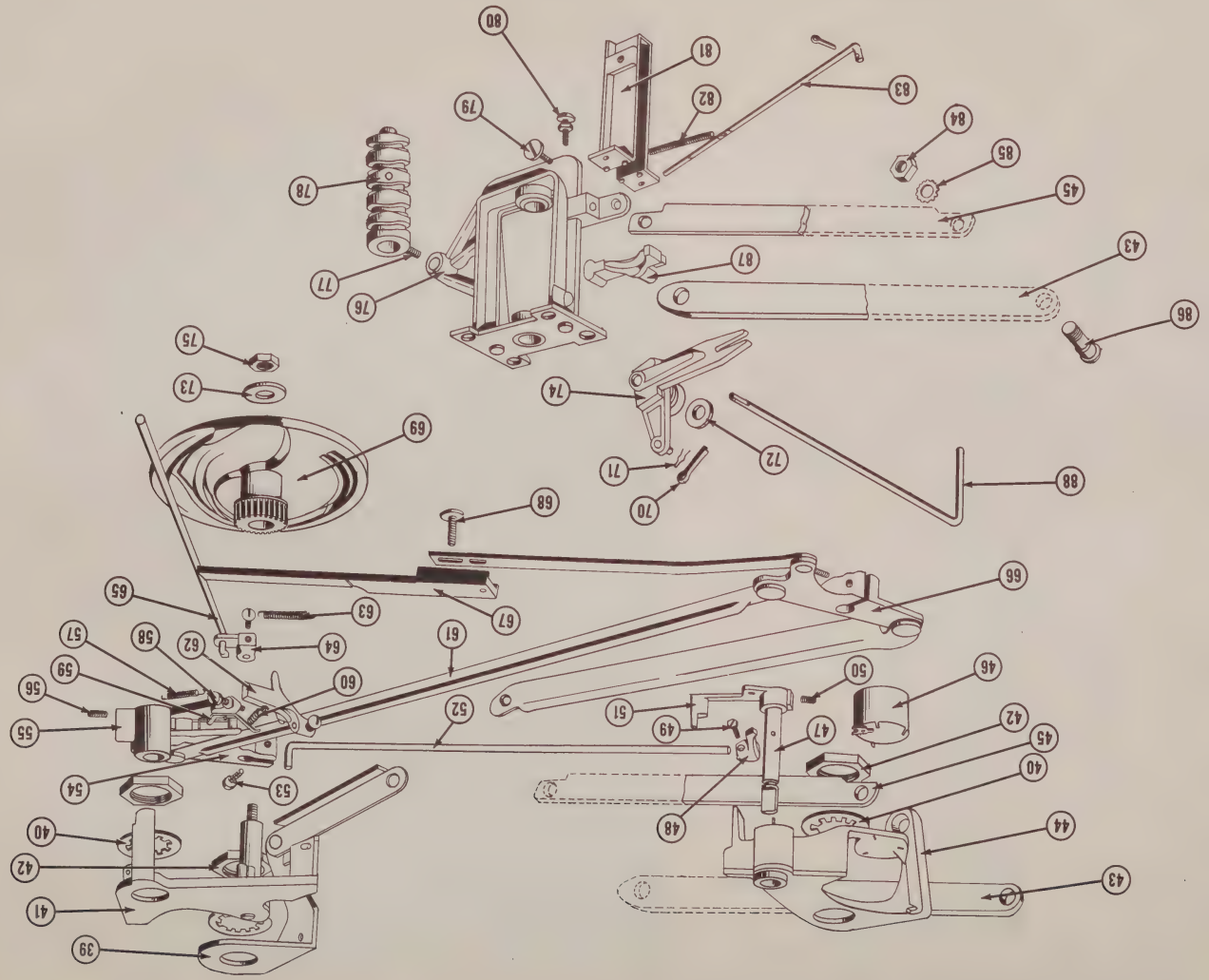
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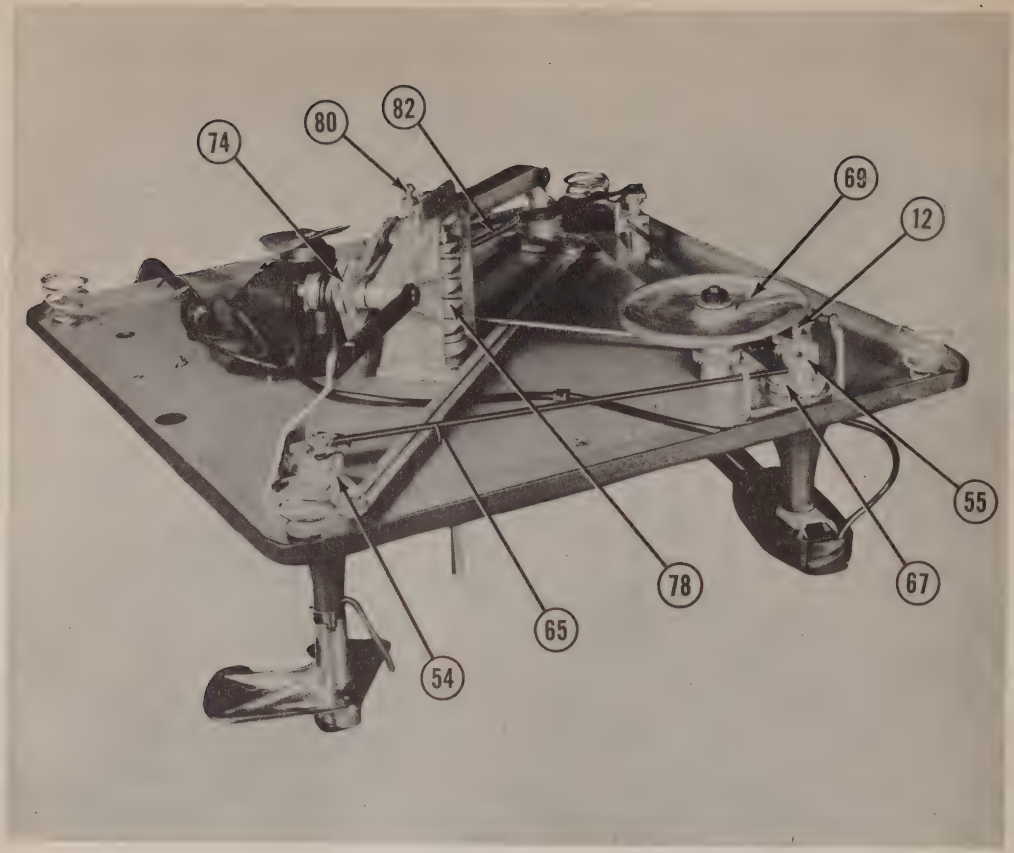


REAR VIEW

SELECTOR

The selector (14) determines the set-down point when playing 12-inch records. In playing position the selector should set just under the upper blade.

MANUAL ROD

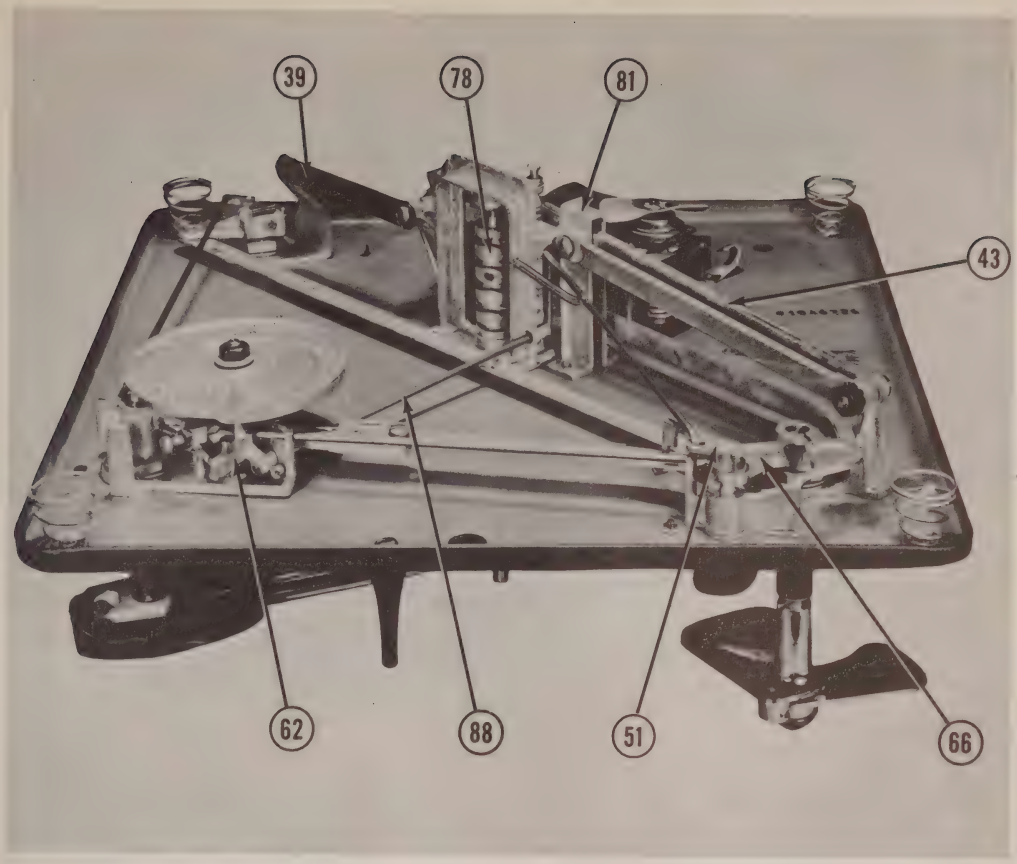
When the control knob is in manual position, the manual rod (83) should extend as far as possible into the sub-frame assembly (76). This may be adjusted by loosening the set screw in the switch crank (51) and turning the crank.

TRIP ROD

The trip rod is adjusted by loosening the set screw in the ratchet (62) and moving the trip rod so it is just under the end of the worm follower (87).

REJECT ROD

To adjust the reject rod (52), loosen the set screw (49) in the reject finger (48). Hold the reject finger against the switch bracket and turn the reject rod until the bent end is against the hub of the ratchet (62).



SIDE VIEW

CAM

If the cam (69) has been removed, it should be replaced as follows:

With the changer in playing position, place the cam in the cam rack gear teeth so the lift pin (12) is just at the bottom of the incline on the outer edge of the cam. If the cam will not fit in this position, loosen the set screw (68) and turn the cam to the proper position. Tighten the set screw securely after this operation.

FOLLOWER ARM SCREW

The follower arm screw (80) should be adjusted to allow a clearance of about 1/64″ between the worm and the worm follower when the changer is in playing position.

LUBRICATION

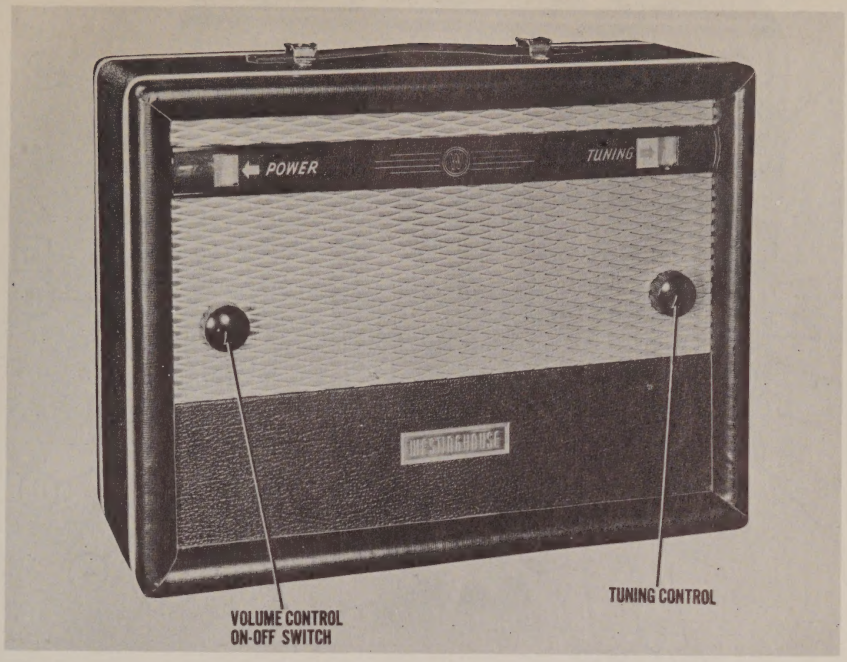
Lubricate approximately once yearly. Apply Lubriplate lightly to the worm and cam surfaces. Use light oil on other moving parts.

PARTS LIST

No.	Part No.	DESCRIPTION
1	R-989 R-995	Tone Arm Tone Arm Assembly complete
2	R-118	No. 10-24 x 3/8" Oval Fil. H.M.S.
3	R- 79-C	Changer button
4	R-464	Lockwasher
5	R-172	Blade assembly
6	R-649-D	Crystal
7		Needle screw
8	R-713	Crystal mounting screw
9	R-172-A	Selector blade assembly
10 11 12	R-445	Lift pin assembly part R-994
13	R-605	Selector shaft assembly
14	R-422	Selector
15	R-614	Turntable shaft assembly
16	R-518	Turntable
17	R-604	Blade shaft assembly
18	R-950	Hinge spring
19	R-942	Hinge and shaft assembly
20	R-941	Hinge pin
21	R- 31	Post thrust washer
22	R-971	Motor mounting screw
23	R-904	Idler wheel
24	R-970	Motor mounting washer
25	R-516	Motor spacer
26	R-961	Motor assembly
27		Idler tension spring
28		Flat washer
29		No. 10-24 B.H.M.S.
30	R-408	Selector post
31	R- 48	Tone arm washer
32	R-615	Pickup arm post
33	R-612	Changer post
34	R-964	Control knob
35		"C" washer
36	R-428	Switch spring
37	R-981	Pickup rest
38	R-779	Base assembly
39	R-991	Post brace assembly
40	R- 3	Lockwasher
41	R-620	Cam bracket assembly
42	R- 4	Nut
43	R-945	Follower arm assembly
44	R-952	Switch bracket assembly
45	R-933	Fulcrum brace

No.	Part No.	DESCRIPTION
46	R-467	Switch
47	R-619	Switch shaft assembly
48	R-626	Reject finger assembly
49		Set screw
50		Set screw
51	R-955	Switch crank
52	R-451	Reject rod
53	R-191	No. 10-32 x 5/8" Fil. H.M.S.
54	R-622	Blade crank assembly
55	R-613	Tone arm crank assembly
56		Set screw
57	R-461	Pawl spring
58	R-443	Stop screw
59	R-205	Ratchet pawl
60	R-775	Ratchet spring
61	R-436	Linking bar assembly
62	R-440	Ratchet
63	R-919	Selector spring
64	R-425	Selector crank
65	R-424	Selector rod
66	R-623	Bell crank assembly
67	R-438	Cam rack
68	R-277	No. 8-32 x 3/8" B.H.M.S.
69	R-607	Indexing cam assembly
70	R-654	Cotter pin 3/32" x 5/8"
71	R-130	Spring clip
72		Flat washer
73	R-435	1/4" washer
74	R-421	Clutch assembly
75	R-113	Hex nut 1/4-20 x 3/16
76	R-956 R-598	Sub-frame and bearing assembly Thrust ball
77		No. 10-24 x 5/16" B.H.M.S.
78	R-954	Worm and set screw
79	R-409	No. 10-24 x 5/16" B.H.M.S.
80	R-868	Screw and nut assembly
81	R-932	Follower arm guide
82	R-133	Manual rod spring
83	R-939 R-996	Manual rod Cotter pin
84	R-113	Hex nut 1/4-20 x 3/16"
85	R-953	Lockwasher
86	R-931	Shoulder bolt
87	R-944	Worm follower
88	R-426	Trip rod

WESTINGHOUSE
MODEL H-148



WESTINGHOUSE
MODEL H-148

WESTINGHOUSE MODEL H-148

TRADE NAME	Westinghouse, Model H-148
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.
TYPE SET	Three Power Portable Superheterodyne - Self Contained Loop Antenna
TUBES (FOUR)	Types, 1LA6 Converter, 3E6 IF Amp., 1LH4 Det.-AVC-AF, 3LF4 Power Output
POWER SUPPLY	105-125 Volts AC-DC or 9 Volt "A" Battery & 90 Volt "B" Battery in Pack Form
RATING	.150 Amp. @ 117 Volts AC or 50 MA @ 9.2 Volts DC & 12 MA @ 93 Volts DC
TUNING RANGE--BROADCAST	530-1650

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power when ever available. When AC power is used, use an isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum. Output of signal generator should be no higher than necessary to obtain an output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy ant. to .001 MFD. to reduce hum modulation.
.1 MFD.	"	1650KC	"	"	A5	Adjust for maximum output.
	Loop	1400KC	Tune for maximum output.	"	A6	Fashion loop of several turns of wire. Radiate signal into loop of receiver and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1LA6	1LA6	7AK	
2	IF Amp.	3E6	3E6	7CJ	
3	Det.-AVC-AF	1LH4	1LH4	5AG	
4	Power Output	3LF4	3LF4	6BB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA WESTINGHOUSE PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	50	150	V-3861	TA-530		BRD3515	2N520	M-5030-150	Filter - Green
B	20	150							" - Red
6	100	25	V-3866	UHC-102	PRS25-100	BRH251	TC2501	M-100-25	Filament Bypass
7	.05	400	RCP10W4503A	TC-15	484-05	DT4S5	TP426	S-4-05	Line Filter
8	.2	400	RCP10W4204K	TC-2	484-.2	DT4P2	TP429	S-4-2	Line Isolation
9	.005	600	RCP10W6502A	TC-25	684-005	DT6D5	TP408	S-6-005	Output Plate Bypass
10	.005	600	RCP10W6502A	TC-25	684-005	DT6D5	TP408	S-6-005	Audio Coupling
11	.01	400	RCP10W4103A	TC-11	484-01	DT4S1	TP421	S-4-01	AVC Filter
12	.001	600	RCP10W6102A	TC-21	684-001	DT6D1	TP404	S-6-001	Audio Coupling
13	.2	200	RCP10W2204A	TC-2	484-.2	DT4P2	TP429	S-4-2	Filament Bypass
14	.1	400	RCP10W4104A	TC-1	484-.1	DT4P1	TP428	S-4-1	RF Bypass Pwr. Supp.
15	.01	400	RCP10W4103A	TC-11	484-01	DT4S1	TP421	S-4-01	IF Grid Filter
16	.05	200	RCP10W2503A	TC-15	484-05	DT4S5	TP426	S-4-05	Conv. Screen Bypass
17	.001	600	RCP10W6102A	TC-21	684-001	DT6D1	TP404	S-6-001	Ant. Isolation
18	100	500	RCM20A101M	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Audio Plate Bypass
19	100	500	RCM20A101M	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Diode Filter
20	100	500	RCM20A101M	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	" "
21	100	500	RCM20A101M	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	" "
22	330	500	RCM20A331M	1FM-335	1468-00035	5W5T35	MC241	MO.5-333	Osc. Grid Capacitor RF Coupling

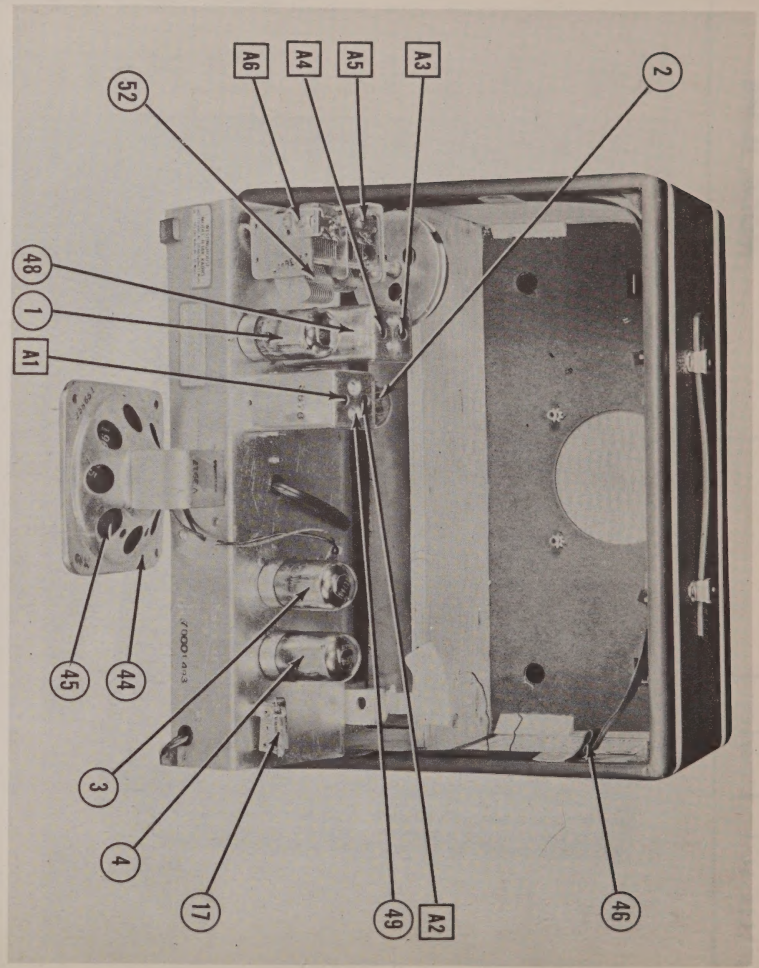
CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA MALLORY PART No.	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA CLAROSTAT PART No.	INSTALLATION NOTES
23A	1 Meg.	1	V-3852	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
24	68Ω	2	RC40AE680M	BW-2-68	Blue-Gray-Blk. Rectifier Ballast
25	2000Ω	5	V-3869	AB-2000	Filament String
26	2200Ω	½	RC20AE222K	BTS-2200	Red-Red-Red Filter
27	680Ω	½	RC10AE681K	BTS-680	Blue-Gray-Br. Filament String
28	1500Ω	½	RC10AE152K	BTS-1500	Br.-Grn.-Red " "
29	820Ω	½	RC10AE821K	BTS-820	Gray-Red-Br. " "
30	680Ω	½	RC10AE681K	BTS-680	Blue-Gray-Br. " "
31	220KΩ	½	RC10AE224M	BTS-220K	Red-Red-Yl. Line Isolating
32	2.2 Meg.	½	RC10AE225M	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
33	680KΩ	½	RC10AE684K	BTS-680K	Blue-Gray-Br. AF Plate Load
34	10 Meg.	½	RC10AE106M	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
35	4.7 Meg.	½	RC10AE475K	BTS-4.7 Meg.	Yl.-Vi.-Grn. AVC Network
36	100KΩ	½	RC10AE104K	BTS-100K	Br.-Blk.-Yl. Diode RF Filter
37	4.7 Meg.	½	RC10AE475K	BTS-4.7 Meg.	Yl.-Vi.-Grn. AVC Network
38	4.7 Meg.	½	RC10AE475K	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
39	4.7 Meg.	½	RC10AE475K	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
40	47KΩ	½	RC10AE473K	BTS-47K	Yl.-Vi.-Or. Converter Screen Dropping
41	220KΩ	½	RC10AE224M	BTS-220K	Red-Red-Yl. Oscillator Grid
42	2.2 Meg.	½	RC10AE225M	BTS-2.2 Meg.	Red-Red-Grn. Converter Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WESTINGHOUSE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
43	6000Ω	3.4Ω	250Ω	.4Ω	V-3868	A-3878	T22S47		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			WESTINGHOUSE PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-113		
44	PM	3.4Ω	V-3917	Mod. P4-X		
	CONE DIA.	VC DIA.				
45	4"	1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

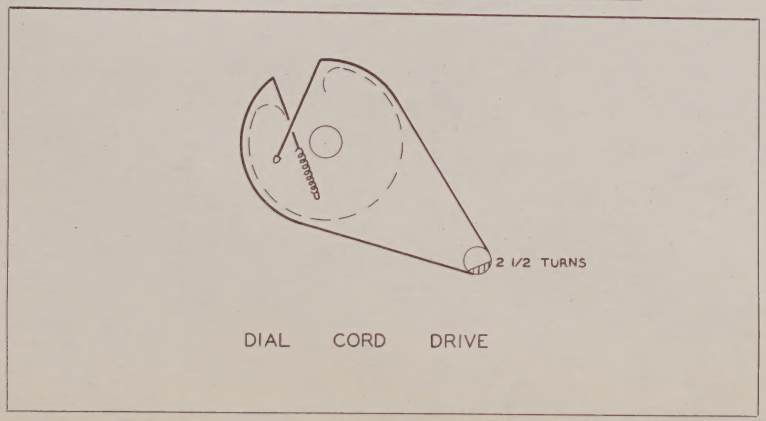
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	WESTINGHOUSE PART No.	MEISSNER PART No.	
46	Loop Ant.	.5Ω	1.5Ω			
47	Osc. Coil		10.5Ω	V-3845	14-1040	
48	Input IF	13Ω	13Ω	V-3877	16-6658	
49	Output IF	.1Ω*	11Ω	V-3876		
		11Ω				

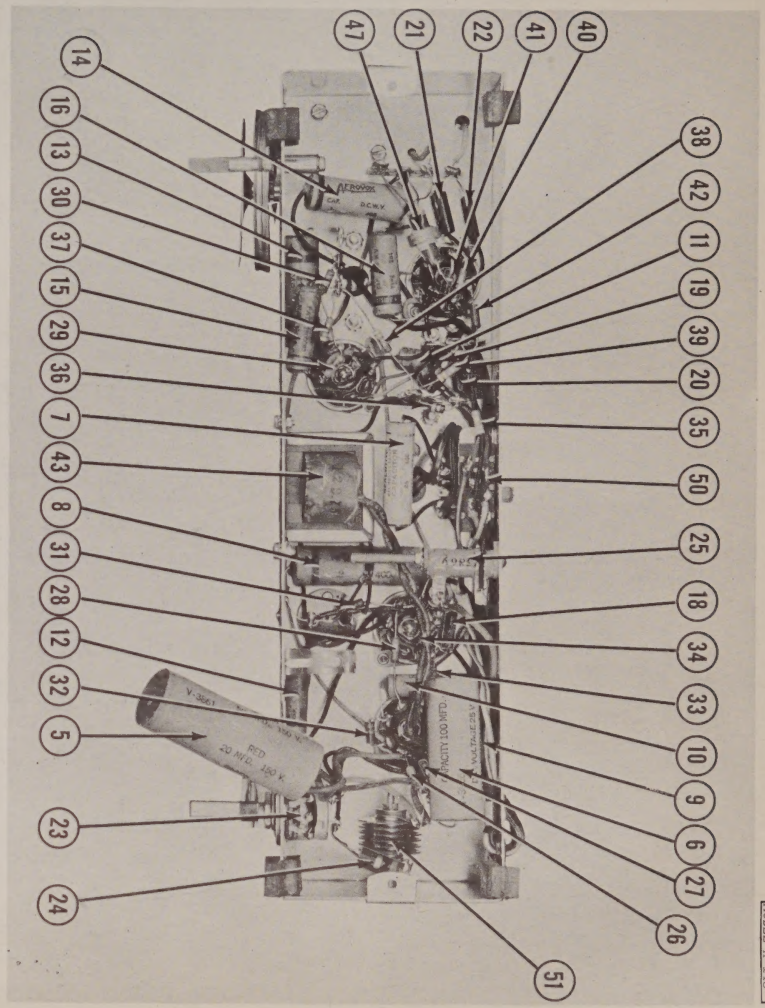
*Screen Grid Winding

MISCELLANEOUS

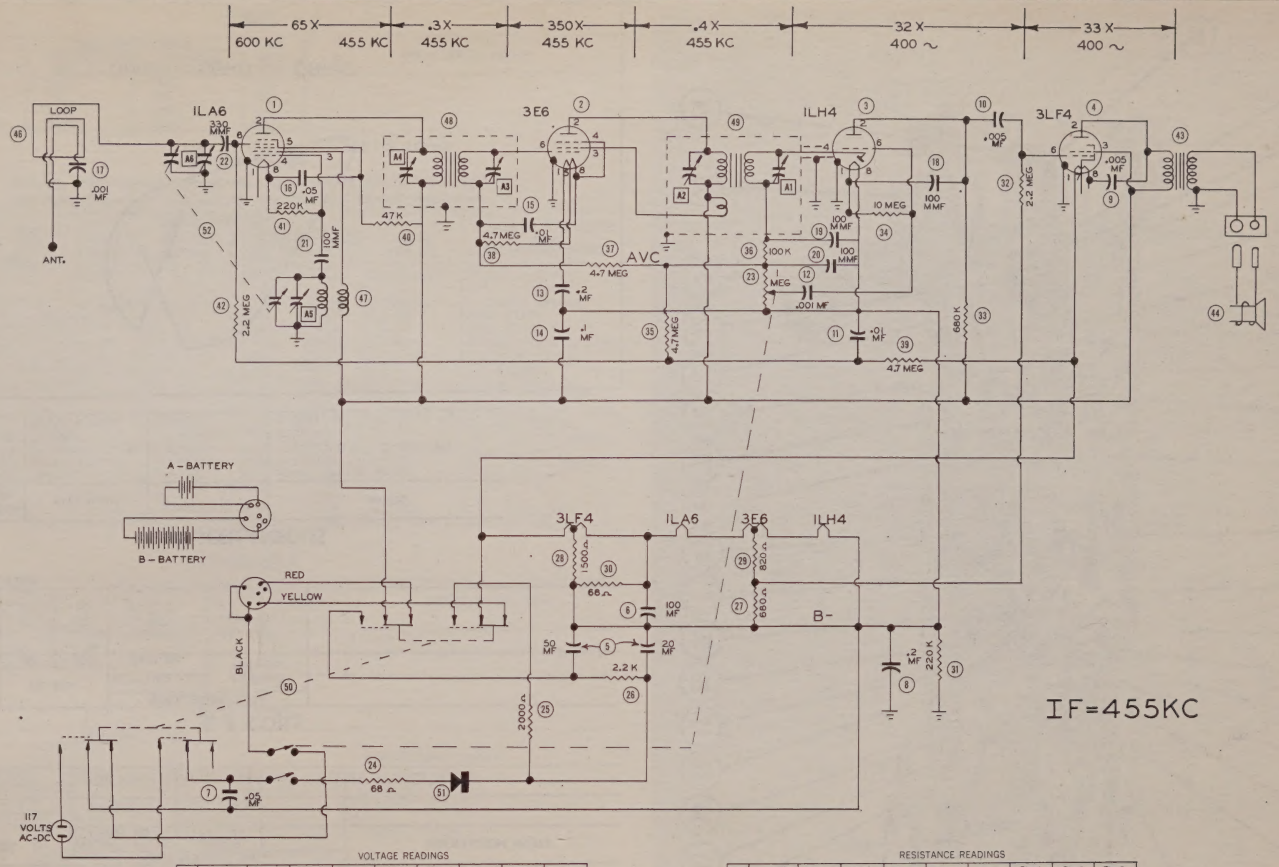
ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
50	Switch	V-3872	Power Change-Over
51	Rectifier	V-4115	Selenium
52	2 Gang Var. Cap.	V-3858	(14-411 MMF, 22-132 MMF)
A6	Trimmer	V-4542	Ant. Adj.
	Battery Pack	V-3920	9 Volt "A" & 90 Volt "B"



CHASSIS—BOTTOM VIEW



WESTINGHOUSE MODEL H-148



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LA6	6.2 V DC	95 V DC	95 V DC	4 V DC	35 V DC	2 V DC	95 V DC	4.6 V DC
2	3E6	4.6 V DC	95 V DC	95 V DC	1.7 V DC	3.1 V DC	0 V	1.5 V DC	1.7 V DC
3	1LH4	1.7 V DC	47.5 V DC	0 V	-3 V DC	0 V	0 V	0 V	0 V
4	3LF4	9 V DC	95 V DC	95 V DC	95 V DC	1.7 V DC	0 V	7.6 V DC	6.2 V DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LA6	*	4 K Ω	4 K Ω	200 K Ω	42 K Ω	4.5 MEG	4 K Ω	*
2	3E6	*	4 K Ω	4 K Ω	*	*	2.5 MEG	350 Ω	*
3	1LH4	*	620 K Ω	220 K Ω	900 K Ω	0 Ω	10 MEG	0 Ω	*
4	3LF4	*	4 K Ω	4 K Ω	4 K Ω	350 Ω	1.9 MEG	*	*

NOTE: RESISTANCE MEASUREMENTS TAKEN IN AC-DC POSITION.

* DO NOT USE OHMMETER TO CHECK THESE READINGS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.